eppendorf

Register your instrument!
www.eppendorf.com/myeppendorf



DOMINIQUE DUTSCHER SAS

Ultra-Low Temperature Freezer

CryoCube® F101h

Operating Manual

Copyright © 2023 Eppendorf SE, Germany. All rights reserved, including graphics and images. No part of this publication may be reproduced without the prior permission of the copyright owner.

Eppendorf® and the Eppendorf Brand Design are registered trademarks of Eppendorf SE, Germany.

Eppendorf trademarks and trademarks of third parties may appear in this manual. All trademarks are the property of their respective owners. The respective trademark name, representations and listed owners can be found on www.eppendorf.com/ip.

The software of this product contains open source software. License information is available in the delivery box.

U.S. Patents and U.S. Design Patents are listed on www.eppendorf.com/ip.

DOMINIQUE DUTSCHER SAS

0045501818-01/062023

Table of contents

1 About this manual **6**
1.1 About this manual 6
1.2 Warning notice structure 6
1.3 Symbols used 6
1.4 Other applicable documents 7

2 Safety **8**
2.1 Intended use 8
2.2 Residual risks when used as intended 8
2.2.1 Personal injury 8
2.2.2 Material damage 9
2.3 Application limits 10
2.4 Target groups 10
2.5 Information for the owner 11
2.6 Personal protective equipment 11
2.7 Information on product liability 11
2.8 Information on the device 12

3 Product description **15**
3.1 Features 15
3.2 Product overview 16
3.3 Control panel 19
3.3.1 Control panel 19
3.3.2 Indicator lights 20
3.3.3 Operating controls 20
3.4 Accessories 21
3.4.1 Optional accessories 21

4 Functional description **23**
4.1 Alarm concept 23
4.2 Device-specific messages 23
4.3 VisioNize Lab Suite 23

5 Installation **24**
5.1 Checking the electrical connection 24
5.2 Inspecting the location 24
5.3 Checking the delivery 25
5.4 Setting up the device 26
5.5 Removing the transport securing device from the shelf 26
5.6 Changing the position of a shelf 27
5.7 Connecting the device to the voltage supply 28
5.8 Connecting the device to the building management system 28
5.9 Checking the device functions 29

6 Preparing the device for use **31**
6.1 Switching on the device 31
6.2 Setting the temperature 31

DOMINIQUE DUTSCHER SAS

6.3 Setting alarm limits. . . . 32
6.4 Setting a delay time for the "Interior temperature" alarm. . . . 33
6.5 Activating the lock code. . . . 34
6.6 Deactivating the lock code. . . . 35
6.7 Locking the device. . . . 36
6.8 Unlocking the device. . . . 36

7 Operation. . . . 37
7.1 Opening and closing the door. . . . 37
7.2 Loading the device. . . . 38

8 Maintenance. . . . 39
8.1 Service. . . . 39
8.1.1 Service schedule. . . . 39
8.1.2 Entering the offset for the temperature. . . . 39
8.1.3 Defrosting the device. . . . 40
8.1.4 Checking the device for damage. . . . 41
8.2 Cleaning. . . . 41
8.2.1 Cleaning the device. . . . 41
8.2.2 Cleaning the air filter and the air intake grille. . . . 42
8.2.3 Cleaning the seals. . . . 43
8.2.4 Cleaning the control panel. . . . 43
8.2.5 Decontaminating the inner door. . . . 43
8.2.6 Decontaminating the interior and the shelf. . . . 45

9 Troubleshooting. . . . 46
9.1 Control panel errors. . . . 46
9.2 Outer door errors. . . . 46
9.3 Air filter errors. . . . 46
9.4 Software error messages. . . . 46

10 Shut down. . . . 48
10.1 Switching off the device. . . . 48
10.2 Disconnecting the device from the voltage supply. . . . 48

11 Transport. . . . 49
11.1 Preparing the device for transport. . . . 49
11.2 Transporting the device. . . . 49
11.3 Shipping the device. . . . 50

12 Disposal. . . . 52
12.1 Legal regulations. . . . 52
12.2 Preparing for disposal. . . . 54
12.3 Handing over the device to the disposal company. . . . 54

13 Technical data. . . . 55
13.1 Dimensions. . . . 55
13.2 Weight. . . . 56
13.3 Ambient conditions. . . . 56

DOMINIQUE DUTSCHER SAS

13.4 Current consumption. 57
13.5 Noise level. 57
13.6 Interface. 57
13.7 Capacity and load. 57
13.8 Cooling. 58
13.9 Materials. 58

14 Ordering information. 59
14.1 Accessories. 59

15 Index. 61

DOMINIQUE DUTSCHER SAS

1 About this manual

1.1 About this manual

1. Please read this manual before you use the product.
2. Please ensure that you have the manual available during the use of the product.

You can find the current version of the manual at www.eppendorf.com/manuals.

– Please contact Eppendorf SE to obtain a different version of the manual.

1.2 Warning notice structure



HAZARD LEVEL! Type of danger

Source of danger
Consequences of disregarding the danger

– Measures to avoid the danger

Symbol	Hazard level	Type of danger	Meaning
	**DANGER**	Personal injury	Will lead to severe injuries or death.
	**WARNING**	Personal injury	May lead to severe injuries or death.
	**CAUTION**	Personal injury	May lead to minor or moderate injuries.
	**NOTICE**	Material damage	May lead to material damage.

1.3 Symbols used

Graphic presentation	Meaning
1. 2.	Action steps
•	Bullet point
Text	Display text
Key	Name of a port, button, status display, or key
	Important information
	Hint

DOMINIQUE DUTSCHER SAS

1.4 Other applicable documents

The following documents supplement this manual:

- Unpacking guide
- Instructions for accessories and consumables
- Certificate of conformity

DOMINIQUE DUTSCHER SAS

2 Safety

2.1 Intended use

CryoCube ULT freezers are designed to provide an ultra-low temperature environment for storing materials for scientific research and general laboratory use. They allow for storage of materials at ultra-low temperatures from -50 °C to -86 °C. The device is not registered as a medical device and is not intended for medical use.

All country-specific safety requirements for operating electrical equipment in laboratories must be observed.

2.2 Residual risks when used as intended

To reduce the risk of personal injury and material damage and to avoid dangerous situations, observe the general safety instructions.

2.2.1 Personal injury

2.2.1.1 Biological hazards

Infectious liquids and pathogenic germs can damage your health.

- Observe the national regulations and the biosafety level of your laboratory.
- Wear personal protective equipment.
- Observe the Safety Data Sheets and instructions for use for the accessories.
- Consult the "Laboratory Biosafety Manual" (source: World Health Organization, Laboratory Biosafety Manual, as amended) for comprehensive regulations on handling of germs or biological material of risk group II or higher.

2.2.1.2 Explosion hazards

An explosive atmosphere may form in the device.

- Do not store explosive substances or substances that react violently in the device.
- Do not store any substances which could create an explosive atmosphere or positive pressure in the device, e.g., dry ice.

The device is not designed to be used in areas where work with explosive substances is carried out.

The refrigerants R-170 and R-290 used in the device are flammable. If a refrigeration cycle is defective, refrigerant can escape and form explosive mixtures with the ambient air.

- Observe the regulations that apply to your laboratory.
- Make sure there is sufficient air volume at the location.
- Ensure adequate ventilation of the location.

The device's refrigeration cycles contain less than 0.15 kg of refrigerant. Access to and use of the room in which the device is located is not restricted according to *DIN EN 378-3 Refrigerating systems and heat pumps - Safety and environmental requirements - Part 3: Installation site and personal protection*.

DOMINIQUE DUTSCHER SAS

2.2.1.3 Electrical hazard

Touching parts that are under high voltage may result in an electric shock. A fatal electric shock causes cardiac arrhythmia and respiratory paralysis.

- Ensure that the housing and the mains/power cord are undamaged.
- Do not open or remove the housing.
- If the supplied mains/power cord with plug is defective, replace it with a mains/power cord and a plug of the same type.
- Only clean and perform maintenance on the device when it is disconnected from the mains/power line.
- Have an authorized service technician check the electrical safety of the device every 12 months.

2.2.1.4 Cryogenic burns

The temperature in the interior of the device is extremely low. Direct skin contact with interior surfaces or with stored items can cause cryogenic burns.

- Wear cold protection gloves when loading and unloading the device.

2.2.1.5 Mechanical hazards

If two devices that are stacked on top of each other are transported, they can tip over and cause fatal injuries.

- Transport only one device at a time with at least two transport helpers.
- Move only one device at a time with a suitable transport aid, e.g., a pallet truck.

If two devices are not properly connected using the stacking kit, the top device may fall down. Persons may be injured.

- Two devices must only be installed by an authorized service technician.

2.2.2 Material damage

2.2.2.1 Mechanical hazards

If two devices are not stacked properly, the top device may fall down. The devices and parts in the vicinity can be damaged.

- Have the stacking kit installed by an authorized service technician.

2.2.2.2 Electrical hazard

Connecting the device to an incorrect voltage supply will damage the device.

- Only connect the device to voltage sources that correspond to the requirements on the name plate.
- Only use earth/grounded sockets with a protective earth (PE) conductor.
- Only use the mains/power cord supplied.
- Ensure that the device is properly grounded with the mains/power cord included in the delivery.

Condensate may form in the device after transport of the device from a cool environment to a warmer environment.

- Wait for at least 6 h after setting up the device. Connect the device to the mains/power line after this.

DOMINIQUE DUTSCHER SAS

2.2.2.3 Incorrect handling

The use of accessories and spare parts other than those recommended by Eppendorf SE may impair the safety, functioning, and precision of the device. Eppendorf SE cannot be held liable or accept any liability for damage resulting from the use of accessories and spare parts other than those recommended.

- Use only the accessories and spare parts recommended by Eppendorf SE.

2.2.2.4 Loss of samples

Leaving doors open or storing warm materials or accessories increases the temperature in the device. The increase in temperature may cause the stored materials to deteriorate.

- Only load the device when the device has reached the set temperature.
- Cool racks and accessories down to the set temperature before loading these with samples.
- Load the device step by step to minimize the temperature increase.

2.3 Application limits

Due to its design, the device is not suitable for use in a potentially explosive atmosphere.

The device may only be used in a safe environment, such as a ventilated laboratory or under a fume hood. Substances which may potentially contribute to an explosive atmosphere may not be used.

2.4 Target groups

This manual addresses the following target groups who have different qualifications and levels of knowledge.

Owner

The owner is any person or legal entity who operates or owns the device.

The owner provides the device and the necessary infrastructure. The owner has a special responsibility to ensure the safety of all persons working on the device.

User

The user operates the device and works with it. The user must be instructed in the use of the device. The user must have read and fully understood the manual.

Any tasks that go beyond operation may only be performed by the user if this is specified in this manual. The owner must explicitly assign these tasks to the user.

Technical personnel

The technical personnel monitors the building services and ensures the technical prerequisites for the operation of the device.

Authorized service technician

The authorized service technician has been trained and certified by Eppendorf SE to service, maintain, and repair the device.

DOMINIQUE DUTSCHER SAS

2.5 Information for the owner

The owner must ensure the following:

- The device is in a safe operating condition.
- The safety devices are all available and functioning.
- The device is serviced and cleaned in accordance with the instructions in this manual.
- The device is disposed of in accordance with local regulations.
- All work on the device is carried out by users, technical personnel or authorized service technicians who are suitably qualified.
- Personal protective equipment is available and is worn.
- The manual is available during the use of the product.
- The manual is part of the product. The product will only be passed on to others with its manual.

2.6 Personal protective equipment

The personal protective equipment ensures the safety and protection of the users working on the device.

The personal protective equipment must comply with the country-specific regulations, as well as the regulations of the laboratory.

Cold protection gloves

These gloves protect against burns when working in the deep-freeze range.

Dust mask

The mask protects your respiratory system from exposure to dust.

Laboratory protective clothing

The clothing protects against contamination and infection.

Protective clothing for transport

The clothing protects against mechanical impacts.

Protective goggles

The protective goggles protect your eyes from splashes and foreign bodies.

Safety boots

The boots protect the wearer against injury from heavy loads and improve grip on slippery floors.

2.7 Information on product liability

Liability for any resulting personal injury or material damage is transferred to the owner in the following cases:

- The device is used outside of its intended use
- The device is not used in accordance with the operating manual
- The device has spare parts installed that are not authorized by Eppendorf SE
- The device is used with accessories or consumables that are not recommended by Eppendorf SE

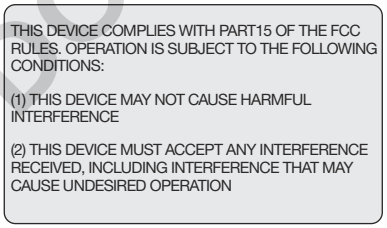
DOMINIQUE DUTSCHER SAS

- Cleaning agents are used that are not recommended by Eppendorf SE
- Chemicals are used that are not recommended by Eppendorf SE
- Not shipped in original packing or in improper replacement packing
- The device is maintained or repaired by persons not authorized by Eppendorf SE
- Unauthorized changes have been made to the device

2.8 Information on the device

Information	Meaning
ATTENTION - RISQUE d'incendie ou d'explosion. Éliminer de façon appropriée conformément à la réglementation nationale ou locale. REFRIGÉRANT INFLAMMABLE utilisé.	Caution Risk of fire or explosion. Dispose of the device properly in accordance with national or local regulations. FLAMMABLE REFRIGERANT.
CAUTION - RISK OF FIRE Or Explosion Dispose Of Properly In Accordance With Federal Or Local Regulations. FLAMMABLE REFRIGERANT Used.	Caution Risk of fire or explosion. Dispose of the device properly in accordance with national or local regulations. FLAMMABLE REFRIGERANT.
	Danger due to flammable refrigerant R-170.
	Danger due to flammable refrigerant R-290.
THIS EPPENDORF FREEZER IS FITTED WITH A CASCADE REFRIGERATION SYSTEM. SERVICE AND REPAIRS MUST BE CARRIED OUT BY A REFRIGERATION SPECIALIST APPROVED BY YOUR SUPPLIER. ANY REPAIRS CARRIED OUT BY UNAUTHORISED ENGINEERS COULD CAUSE SERIOUS DAMAGE TO THE SYSTEM AND MAY AFFECT YOUR WARRANTY.	The device must only be serviced or repaired by a qualified refrigeration specialist authorized by Eppendorf SE. If an unauthorized person services or repairs the device, it may affect your warranty claim.

DOMINIQUE DUTSCHER SAS

Information	Meaning
	The device has passed the electrical safety test.
	The device is compliant with the "Restriction of Hazardous Substances (RoHS)" 2011/65/EU directive.
	The device must only be connected to a mains/power connection with a PE conductor.
	Notice of a hazard point. Read the operating manual.
	Risk of electric shock. Disconnect the mains/power cord from the voltage supply before removing the cover.
	Risk of electric shock.
	Danger due to flammable gas, class 2.
	Danger due to flammable materials.
	The device complies with the *FCC Rules Part 15*. Operation of the device is subject to the following conditions: • This device must not cause harmful noise emission. • This device must accept any interference received. This includes interference that may cause undesired operation.

DOMINIQUE DUTSCHER SAS

Information	Meaning
THIS FREEZER IS FITTED WITH A HIGH EFFICIENCY DOOR SEAL. AFTER CLOSING THE FREEZER DOOR OR LID A VACUUM CAN BE CREATED INSIDE THE CABINET. THIS IS RELEASED THROUGH A SPECIAL VENT VALVE WHICH SHOULD BE KEPT CLEAR OF ICE. (REFER TO HANDBOOK) SHOULD THE VENT VALVE BECOME BLOCKED DO NOT TRY TO FORCE THE DOOR OR LID, WAIT, THE VACUUM WILL EVENTUALLY BE RELEASED BUT IT CAN TAKE 1 OR 2 HOURS. DO NOT DAMAGE THE HIGH EFFICIENCY SEAL OR STRAIN THE HINGES BY ALLOWING THE ICE TO FORM ON THE DOOR SEAL. WIPE CLEAN OCCASIONALLY.	The outer door of the device is fitted with a high efficiency seal. After closing the outer door or the lid, a vacuum can be created inside the device. The vacuum is released by the vent valve. Keep the valve free of ice. Should the vent valve become blocked, do not try to force open the outer door or the lid. Wait for the pressure to be released. This can take 1 h to 2 h. If ice forms on the seal, it can damage the seal and strain the hinges. To avoid damage, remove ice from the seal.
ATTENTION - **RISQUE d'incendie ou d'explosion.** **REFRIGÉRANT INFLAMMABLE utilisé. Consulter le manuel de réparation/guide de l'utilisateur avant d'essayer d'installer ou de réparer cet équipement. Toutes les précautions de sécurité doivent être respectées.**	Caution Risk of fire or explosion. FLAMMABLE REFRIGERANT. Before installing or servicing this device, read the repair manual/instructions for use. All safety precautions must be observed.
DANGER - **RISQUE d'incendie ou d'explosion.** **REFRIGÉRANT INFLAMMABLE utilisé.** **Les réparations doivent être effectuées uniquement par un personnel de service qualifié. Ne pas percer le tube de REFRIGÉRANT.**	Danger Risk of fire or explosion. FLAMMABLE REFRIGERANT. Repairs must be carried out by trained service personnel only. DO NOT puncture the refrigerant lines.
This equipment is indended for use in commercial, industrial, or institutional occupancies as definded in the Safety Standard for Refrigeration Systems, ANSI/ASHRAE 15.	This equipment is intended for use in commercial, industrial, or institutional occupancies as defined in the Safety Standard for Refrigeration Systems, ANSI/ASHRAE 15.

DOMINIQUE DUTSCHER SAS

3 Product description

3.1 Features

The device has the following features:

- 2-stage cascade refrigeration system
- Lockable outer door
- Height-adjustable shelf
- Compartments with insulated and sealed inner doors
- Vent valve
- Control panel with display, softkeys and indicator lights
- Battery-operated alarm function in case of mains/power outage
- Retention of software settings after mains/power outage
- Building management system interface
- Connection to VisioNize possible
- Compatible with CO_2 and LN_2 emergency cooling system

DOMINIQUE DUTSCHER SAS

3.2 Product overview

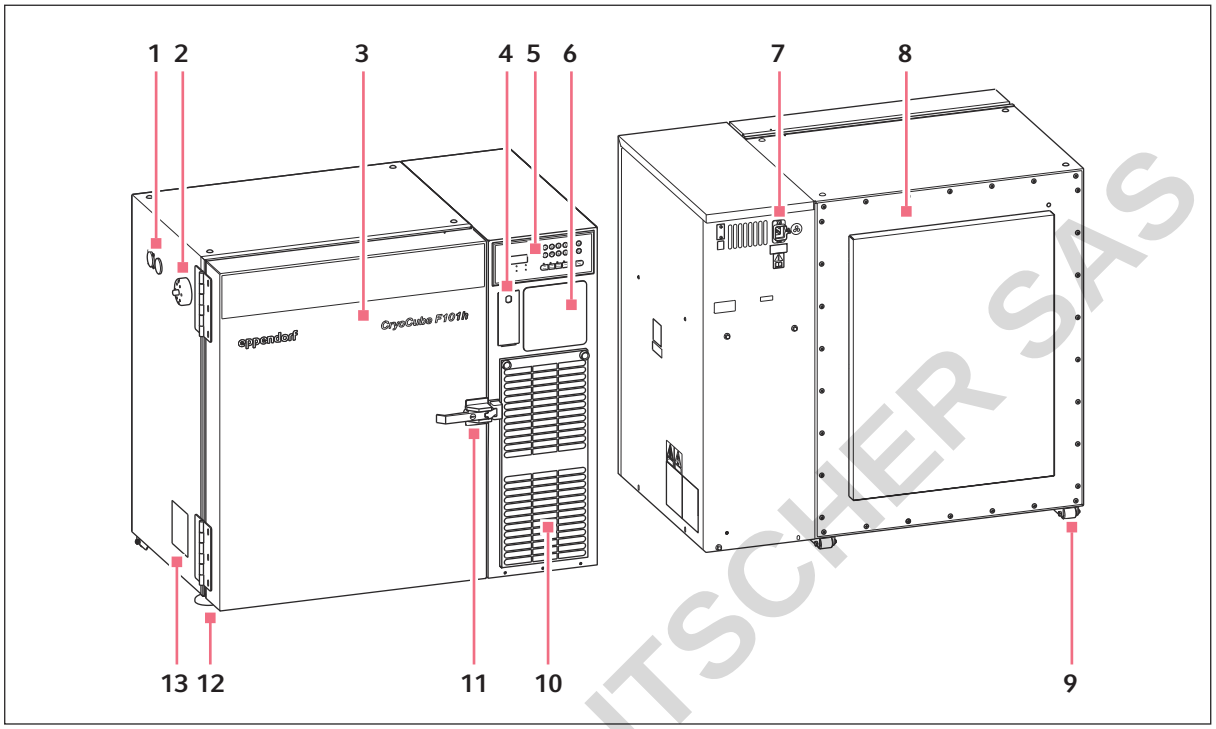


Fig. 3-1: Front and rear view

1 Access port for external sensors or optional back-up system
2 Vent valve
3 Outer door
4 Lockable cover for battery and mains/power switches
5 Control panel
6 Position for optional chart recorder
7 Mains/power connection
8 Rear panel
9 Castor
10 Air filter
11 Lockable door handle
12 Height-adjustable stabilizing foot
13 Name plate

DOMINIQUE DUTSCHER SAS

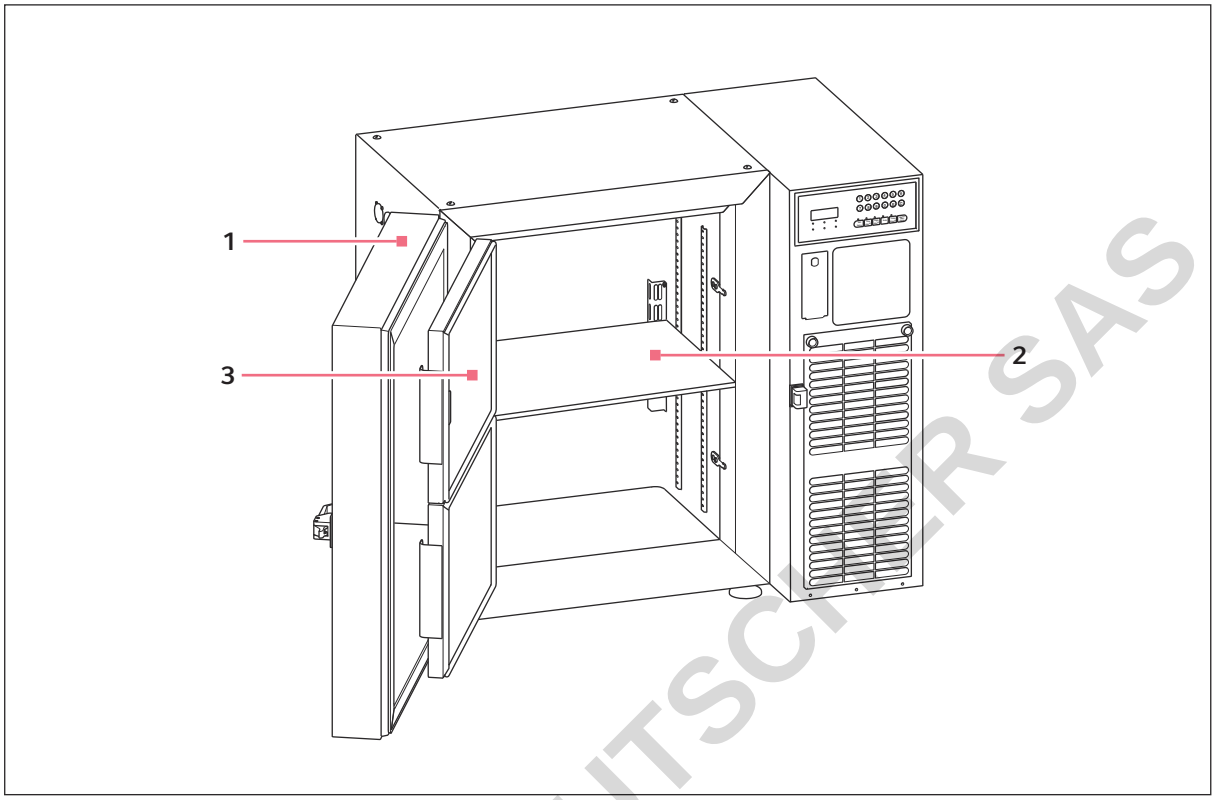


Fig. 3-2: Internal view

1 Outer door

2 Height-adjustable shelf

3 Inner door

DOMINIQUE DUTSCHER SAS

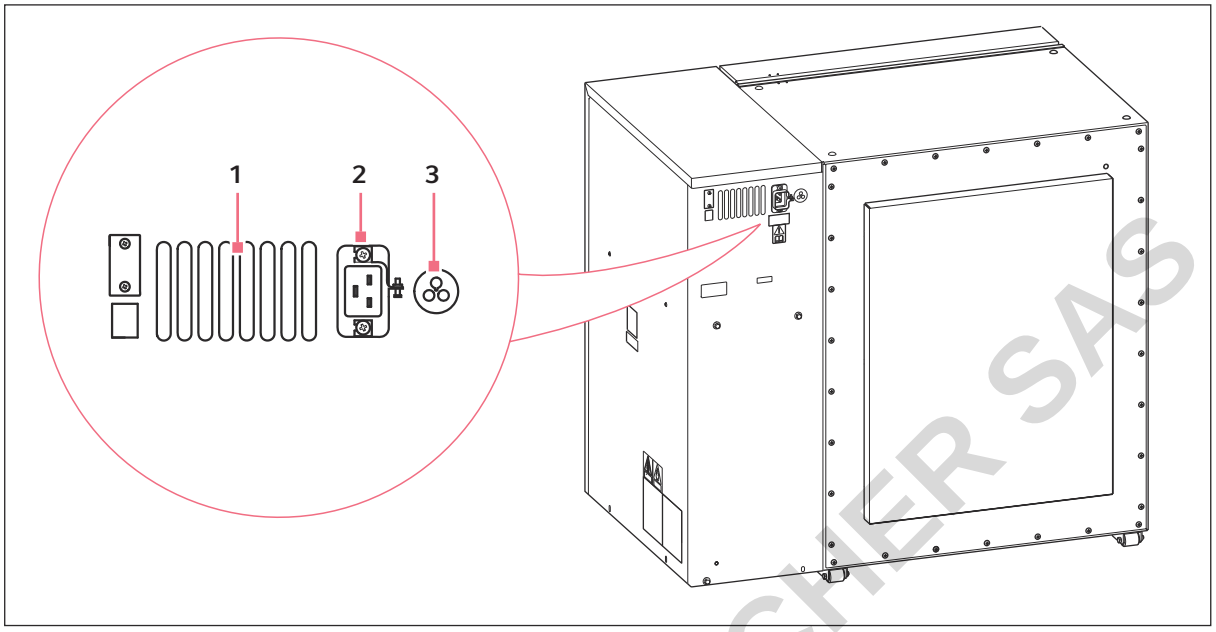


Fig. 3-3: Ventilation grilles and interfaces

1 Ventilation grilles
2 Mains/power connection
3 Building management system interface

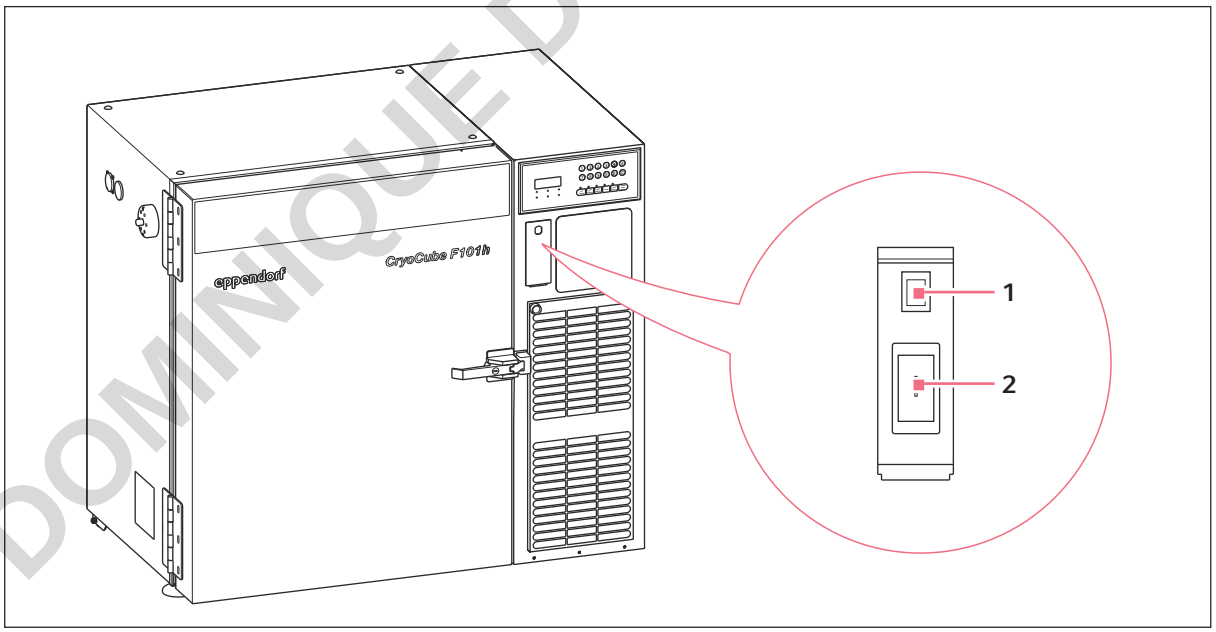


Fig. 3-4: Battery and mains/power switches

1 Battery switch
2 Mains/power switch

DOMINIQUE DUTSCHER SAS

3.3 Control panel

3.3.1 Control panel

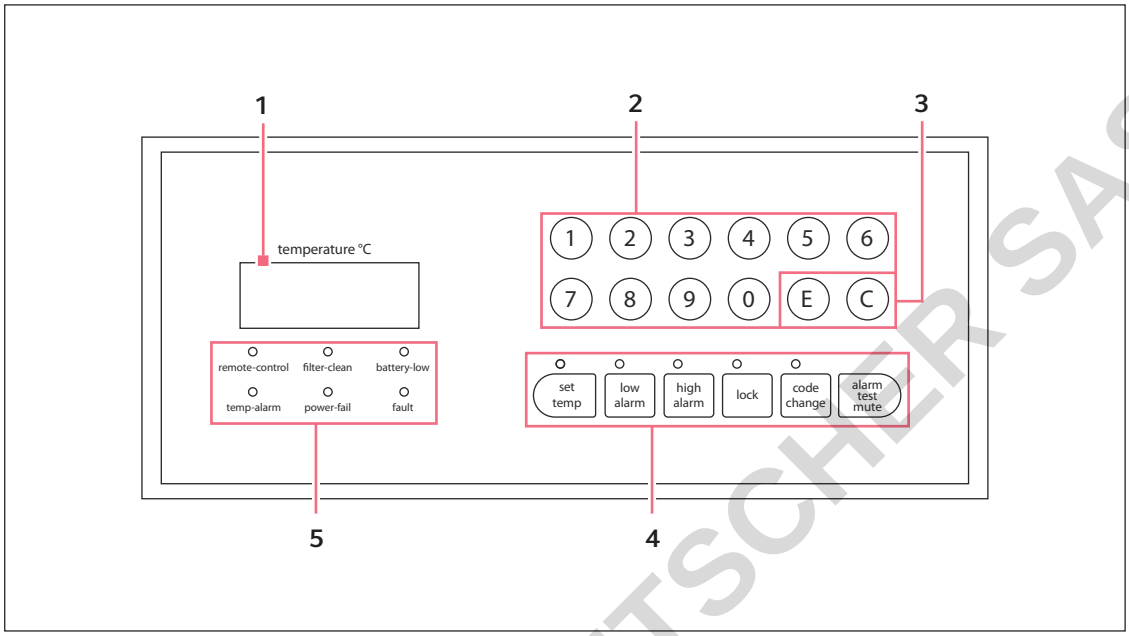


Fig. 3-5: Control panel

1 Display
2 Numerical keys
3 Alphabetic keys
4 Operating controls
5 Indicator lights

Display

The display shows the actual temperature in the interior of the device.

Numerical keys

The numerical keys allow functions to be accessed and values to be entered.

Alphabetic keys

The alphabetic keys allow entries to be confirmed or deleted.

Operating controls

The operating controls allow settings to be made, tested and locked.

Indicator lights

The indicator lights indicate that there is a problem or that a function has been switched on.

DOMINIQUE DUTSCHER SAS

3.3.2 Indicator lights

Indicator light	Description
battery-low	Flashes or lights up if the battery voltage is too low. Lights up if no mains/power supply voltage is available.
fault	Lights up if a system error has occurred.
filter-clean	Lights up if the air filter needs to be cleaned.
power-fail	Flashes if no mains/power supply voltage is supplied to the device. A signal tone sounds.
temp-alarm	Lights up if an alarm limit for the interior temperature has been exceeded.
remote-control	Lights up when the device is connected to an external system.

3.3.3 Operating controls

Numerical keys

Operating control	Function
0 – 9	Enter a value
8	Display the delay time for alarms on the device
9	Display the delay time for remote alarms

Alphabetic keys

Operating control	Function
C	Delete an entry Display the offset for the ambient temperature
E	Confirm an entry Display the software version number

Softkeys

Operating control	Function
alarm test mute	Test or deactivate the signal tone and indicator lights
code change	Change the lock code
lock	Lock or unlock the control panel
high alarm	Display and set the alarm limit for the maximum interior temperature Factory setting: ±5 °C

DOMINIQUE DUTSCHER SAS

Operating control	Function
low alarm	Display and set the alarm limit for the minimum interior temperature
set temp	Display and set the set temperature in the interior Factory setting: -80 °C

3.4 Accessories

3.4.1 Optional accessories

Optional accessories can be ordered separately. More information on accessories can be found on our website www.eppendorf.com.

Backup systems

In the event of a mains/power outage, the battery-powered backup system will start and cool the interior for a limited time. The backup system must only be installed by an authorized service technician.

The following backup systems are available:

- CO_2 backup system for temperatures from -50 °C to -70 °C
- LN_2 backup system for temperatures down to -85 °C

Chart recorder

The chart recorder records the interior temperature on chart recorder paper over a period of 7 days. The connection for the chart recorder is prepared in the device. Only an authorized service technician is allowed to connect the chart recorder.

Pens and paper for chart recorders are available.

Shelf

The device has a shelf. The position of the shelf can be changed. Additional shelves can be mounted.

Stacking kit

A stacking kit allows two devices to be stacked one on top of the other in a safe and stable manner. The stacking kit must only be installed by an authorized service technician.

Padlock adapter

For additional protection against unauthorized access, the device door handle can be equipped with a padlock adapter set.

RS-485 serial interface

The device can optionally be connected to the VisioNize box via the RS-485 serial interface.

Racks

Racks serve to store and organize samples in boxes, microplates and deepwell plates.

DOMINIQUE DUTSCHER SAS

Racks are placed on the interior shelves. The racks are used to store boxes. Stainless steel racks provide space for 136 mm × 136 mm boxes. Aluminum racks can be used to store boxes up to 133 mm × 133 mm.

Racks are available with drawers or with open sides. Racks are designed to ensure even temperature distribution in the entire rack.

Eppendorf Storage Box

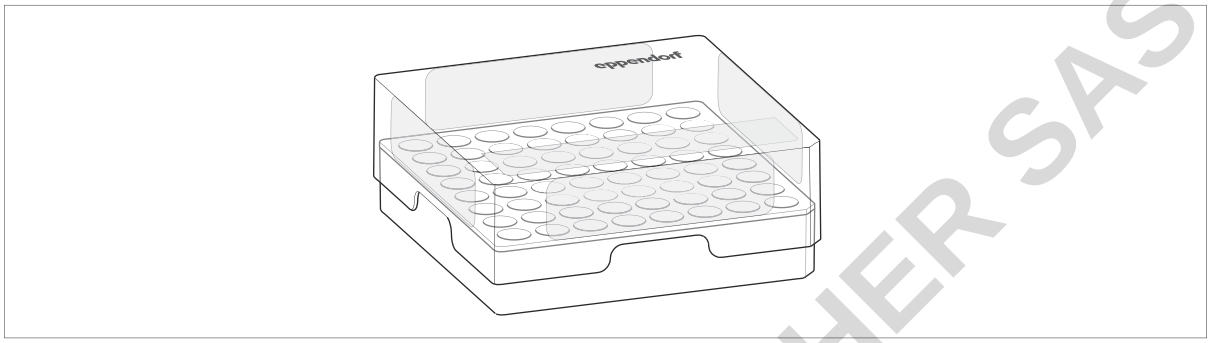


Fig. 3-6: Eppendorf Storage Box

Eppendorf Storage Boxes serve to store samples in tubes at temperatures down to -86 °C.

Eppendorf Storage Boxes are made of polypropylene (PP). They are autoclavable and dishwasher safe.

Cardboard boxes and box dividers

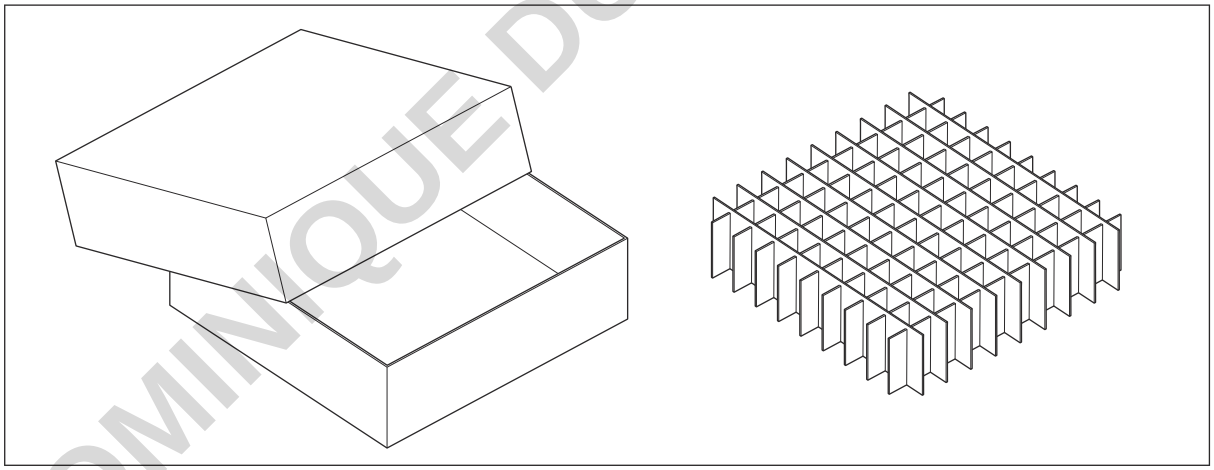


Fig. 3-7: Cardboard box

Cardboard boxes serve to store samples in tubes at temperatures down to -86 °C. Cardboard boxes have a waterproof coating.

To store your samples, you can insert box dividers into the cardboard boxes. Eppendorf SE cardboard boxes and box dividers are compatible with each other.

DOMINIQUE DUTSCHER SAS

4 Functional description

4.1 Alarm concept

An alarm is triggered when a safety-relevant situation occurs. The user must immediately eliminate the cause of the alarm.

Alarms consist of

- a signal tone on the device
- an indicator light on the control panel
- an alarm message on the control panel and
- forwarding of the alarm to a building management system, if connected.

As soon as the cause of the alarm has been eliminated, all alarms will stop.

4.2 Device-specific messages

Alarms

The device can generate the following alarms:

- "Interior temperature" is triggered if the alarm limit is exceeded or not reached.
  The alarm can be forwarded to a building management system.
- "Mains/power outage" is triggered if the mains/power supply to the device is interrupted.
  The alarm can be forwarded to a building management system.
- "Battery" is triggered if the battery voltage is too low.
- "System error" is triggered if there is a problem with the device.
- "Clean air filter" is triggered if the air filter needs to be cleaned.

4.3 VisioNize Lab Suite

VisioNize Lab Suite is a cloud-based platform.

To send performance data to the VisioNize Lab Suite, for example, you can integrate the device into the local network via VisioNize box.

For more information, contact your local Eppendorf partner and refer to the VisioNize Lab Suite Setup Guide.

DOMINIQUE DUTSCHER SAS

5 Installation

5.1 Checking the electrical connection

1. Check whether the electrical connection meets the following requirements:
   - The mains/power connection matches the details on the name plate.
   - An earth/grounded socket with PE conductor is available.
   - A residual current circuit breaker is available and accessible.

All requirements must be fulfilled for the device to be installed and put into operation.

5.2 Inspecting the location

All requirements must be met before the device can be installed and put into operation.

1. Check that the location meets the following conditions:
   - The ambient conditions match the specifications in the technical data
   - The location is protected against heat sources, sparks and open fire
   - The location has a sufficient air volume and air exchange
   - Non-explosive environment
   - The floor is designed for the weight of the device
   - The floor is level and vibration-free

DOMINIQUE DUTSCHER SAS

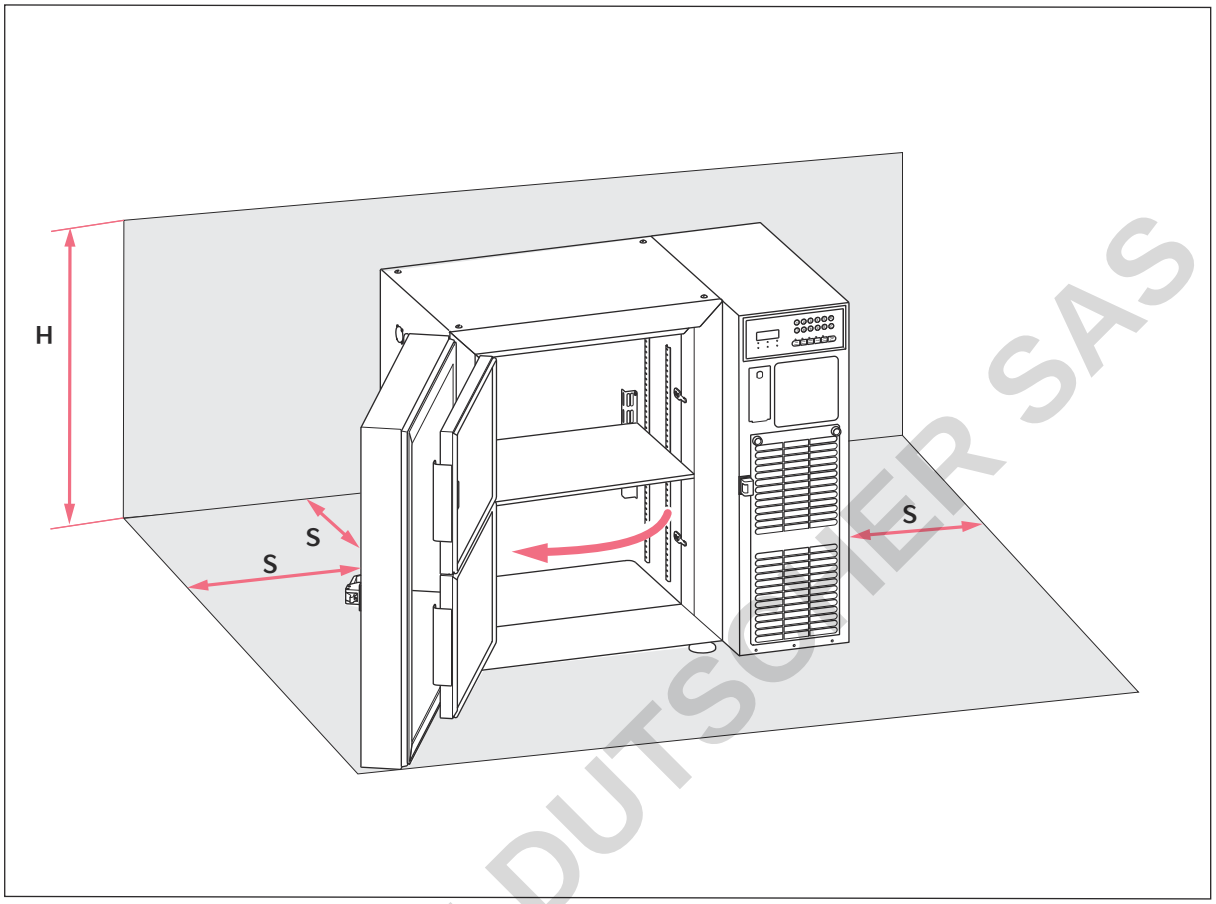


Fig. 5-1: Footprint

H 850 mm S 100 mm

5.3 Checking the delivery

1. Check the packing and the contents for any visible external damage.
2. Check whether the delivery is complete and matches the order.

Do no use the product if the packing or the contents are damaged. In case of damage or missing parts, contact the Eppendorf SE customer service or your Eppendorf partner.

Table 1: Delivery package

Quantity	Description
1	ULT freezer
1 or 2	Mains/power cord (quantity depends on country)
1	Safety clamp for mains/power cord

DOMINIQUE DUTSCHER SAS

Quantity	Description
2	Key for switch locking plate
2	Key for mechanical lock
1	Plug for connection to the building management system
1	Operating manual
1	Unpacking guide
1	Certificate of conformity

Keep the original packing for shipping and storing the device.

5.4 Setting up the device

Protective equipment:

- Laboratory protective clothing

Prerequisites

- The device has been unpacked.
- The device has been transported to the location.

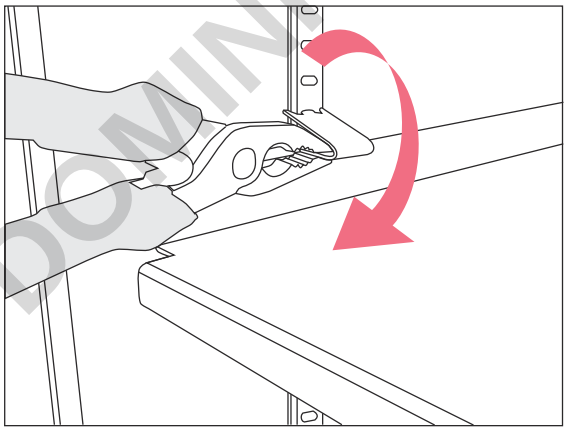
1. Level the device using the height-adjustable stabilizing feet.
2. Wait at least 6 h before connecting the device to the voltage supply.

5.5 Removing the transport securing device from the shelf

The device is supplied with one shelf. The shelf is secured for transport to the pilaster rail by 2 mounting clips.

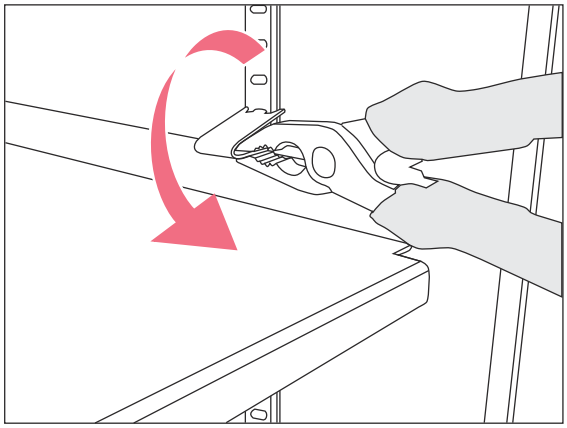
Tool:

- Pliers



1. Grip the lower part of the mounting clip with the pliers.
2. To unfasten the mounting clip on the left side, carefully turn the pliers clockwise.

DOMINIQUE DUTSCHER SAS



3. To unfasten the mounting clip on the right side, carefully turn the pliers counter-clockwise.
4. Remove the mounting clip from the pilaster rail.

5.6 Changing the position of a shelf

CAUTION! Cryogenic burns

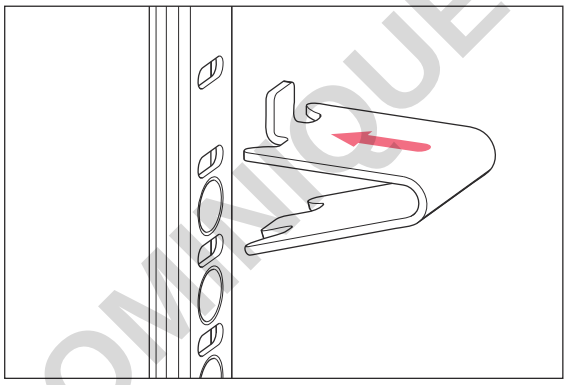
The temperature in the interior of the device is extremely low. Direct skin contact with interior surfaces or with stored items can cause cryogenic burns.

– Wear cold protection gloves when loading and unloading the device.

You can change the position of the shelf or mount additional shelves. 4 mounting clips are required to securely mount a shelf.

Protective equipment:

- Cold protection gloves



1. Insert the upper part of the mounting clip into the hole above.
2. Insert the bracket on the mounting clip into the hole in the shelf column.
3. Attach a mounting clip to each shelf column.
4. Place the shelf on the mounting clips.

DOMINIQUE DUTSCHER SAS

5.7 Connecting the device to the voltage supply

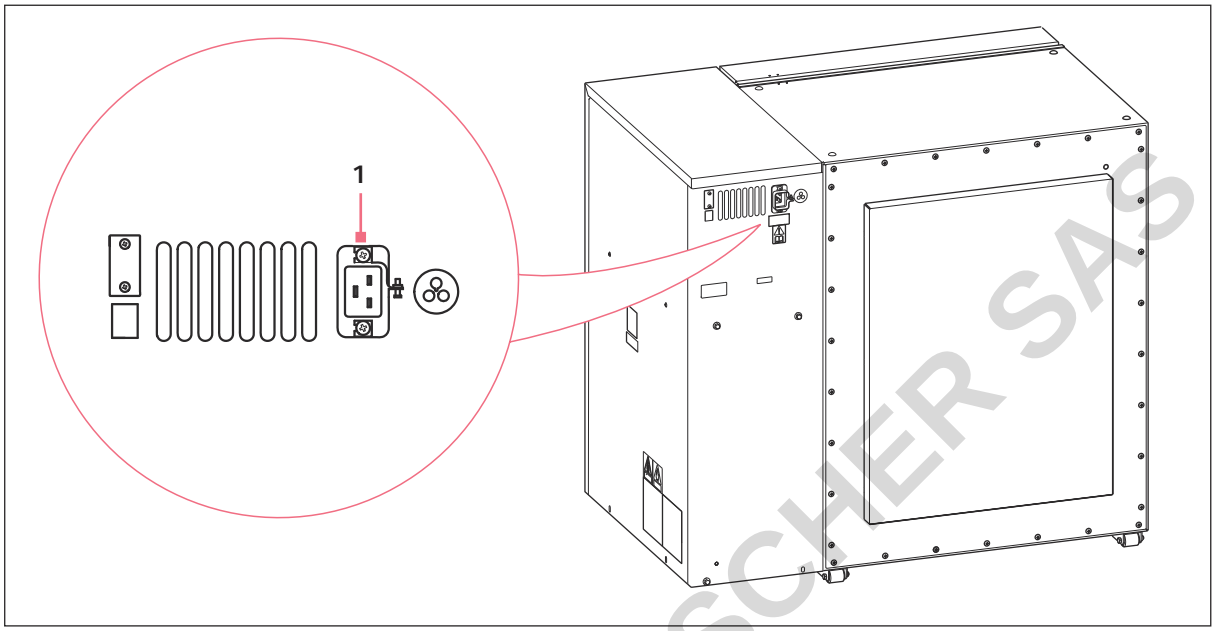


Fig. 5-2: Mains/power connection

1 Mains/power connection

Prerequisites

- The device has been set up in accordance with this operating manual.
- The device has been allowed to acclimatize for at least 6 h.

1. If multiple mains/power cords have been supplied: select the appropriate mains/power cord for the mains/power supply voltage.
2. Connect the IEC connector to the rear of the device.
3. Tighten the safety clamp.

   The safety clamp prevents the mains/power cord from accidentally being pulled out of the device.
4. Connect the mains/power plug to the earth/grounded socket.

5.8 Connecting the device to the building management system

The ULT freezer has an interface to a building management system. A plug for the interface to the building management system is included in the delivery.

The owner is responsible for connecting the plug to the building management system.

DOMINIQUE DUTSCHER SAS

An alarm is forwarded to the building management system in the following cases:

- The interior temperature is too high
- The interior temperature is too low
- In the event a mains/power outage occurs

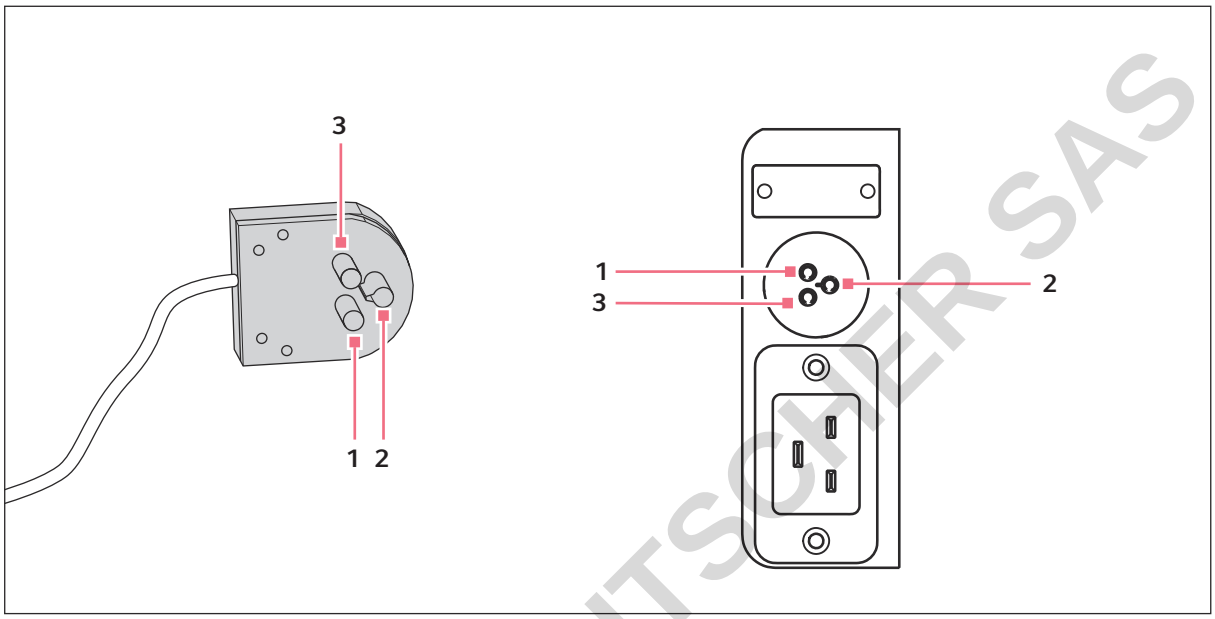


Fig. 5-3: Plug and connection socket on the device

1 Pin 1
2 Pin 2
3 Pin 3

Switching state	Pin assignment	
No alarm	Pin 1 is electrically connected to pin 2	Pin 3 is not connected
Alarm	Pin 1 is electrically connected to pin 3	Pin 2 is not connected

1. Connect the plug to the device and the building management system.

5.9 Checking the device functions

Prerequisites

- The device has been set up and installed in accordance with this operating manual.
- The device is not loaded.

DOMINIQUE DUTSCHER SAS

- The device is switched on.
- The compressors are running.

1. Check that the control panel lights up.
2. Check whether the temperature in the device drops.
3. Check that the alarm limits are set correctly by pressing the **high alarm** and **low alarm** softkeys.
4. Check if an alarm is triggered by opening the door and leaving it open for 1 min.
5. Check if an alarm is triggered by unplugging the device without switching off the device.

DOMINIQUE DUTSCHER SAS

6 Preparing the device for use

6.1 Switching on the device

Tool:

- Key for switch locking plate

Prerequisites:

- The device has been set up and connected in accordance with this operating manual.
- The device has been allowed to acclimatize for at least 6 h.

1. Open the switch locking plate and remove the cover.
2. Switch on the mains/power switch.
3. Switch on the battery switch.
4. Replace the cover and close the switch locking plate.

6.2 Setting the temperature

You can set the set temperature for the interior within a range of -50 °C to -86 °C in increments of 1 °C.

Prerequisites

- The device is not protected by a lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.
2. Press the **set temp** softkey.

   The *set temp* indicator light flashes.

   The temperature *0* is displayed.
3. Enter the desired set temperature using the numerical keys.

   The set temperature is automatically displayed as a negative value.
4. To delete the entry, press the alphabetic key **C**.
5. To confirm the entry, press the alphabetic key **E**.

   The *set temp* indicator light goes out.

   The set temperature is stored and activated.
6. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

DOMINIQUE DUTSCHER SAS

6.3 Setting alarm limits

You can set alarm limits for the interior temperature. If the interior temperature exceeds an alarm limit, an alarm is triggered.

Alarm limit	Minimum value	Maximum value
For the minimum interior temperature	-91 °C	5 °C below the set temperature
For the maximum interior temperature	5 °C above the set temperature	-10 °C

Setting the alarm limit for the minimum interior temperature

Prerequisites

- The device is not protected by a lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.

2. Press the **low alarm** softkey.

   The *low alarm* indicator light flashes.

   The display shows the alarm limit *0*.

3. Enter the desired alarm limit for the minimum temperature using the numerical keys.

   The alarm limit for the minimum temperature is displayed.

4. To delete the entry, press the alphabetic key **C**.

5. To confirm the entry, press the alphabetic key **E**.

   The *low alarm* indicator light goes out.

   The alarm limit for the minimum temperature is stored and activated.

6. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

Setting the alarm limit for the maximum interior temperature

Prerequisites

- The device is not protected by a lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.

DOMINIQUE DUTSCHER SAS

2. Press the **high alarm** softkey.

   The *high alarm* indicator light flashes.

   The display shows the alarm limit *0*.

3. Enter the desired alarm limit for the maximum temperature using the numerical keys.

   The alarm limit for the maximum temperature is displayed.

4. To delete the entry, press the alphabetic key **C**.

5. To confirm the entry, press the alphabetic key **E**.

   The *high alarm* indicator light goes out.

   The alarm limit for the maximum temperature is stored and activated.

6. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

6.4 Setting a delay time for the "Interior temperature" alarm

You can set a delay time. The alarm is triggered if the interior temperature is above the alarm limit after the delay time has elapsed. The factory setting for both on-site and remote alarms is 30 min. If you set a delay time of 0 min, the delay time will automatically be set to 15 s. The maximum delay time is 40 min.

Setting the delay time for the on-site alarm

Prerequisites

- The device is not protected by a lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.

2. Press the numerical key **8**.

   The value *PP* is displayed.

3. Enter the desired delay time for the on-site alarm using the numerical keys.

   The display shows the delay time for the on-site alarm.

   If the entered value is outside the thresholds, the message *EE* is displayed.

   – Repeat the entry taking into account the limit values.

4. To delete the entry, press the alphabetic key **C**.

DOMINIQUE DUTSCHER SAS

5. To confirm the entry, press the alphabetic key **E**.

   The display shows the message ---.

   The delay time for the on-site alarm is saved and activated.

6. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

Setting the delay time for the remote alarm

Prerequisites

- The device is not protected by a lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.

2. Press the numerical key **9**.

   The value *PP* is displayed.

3. Enter the desired delay time for the remote alarm using the numerical keys.

   The display shows the delay time for the remote alarm.

   If the entered value is outside the thresholds, the message *EE* is displayed.

   – Repeat the entry taking into account the limit values.

4. To delete the entry, press the alphabetic key **C**.
5. To confirm the entry, press the alphabetic key **E**.

   The display shows the message ---.

   The delay time for the remote alarm is saved and activated.

6. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

6.5 Activating the lock code

The device can be protected against unintentional programming by means of a four-digit lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.

DOMINIQUE DUTSCHER SAS

2. Press the **code change** softkey.

   The *code change* indicator light lights up.

   The display is blank.
3. Enter the desired lock code using the numerical keys.

   The lock code is displayed.
4. Check the entry.
5. To delete the entry, press the alphabetic key **C**.
6. To confirm the entry, press the alphabetic key **E**.

   The *code change* indicator light goes out.

   The lock code is stored and activated.
7. Press the **code change** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

If the lock code is lost, the device cannot be reprogrammed. In this case, an authorized service technician will need to reset the lock code.
- Keep the lock code in a safe place.

6.6 Deactivating the lock code

The lock code can be deactivated by entering 0000.

1. Press the **lock** softkey.

   The *lock* indicator light flashes.
2. Enter the current four-digit lock code.

   The actual interior temperature is displayed.

   The *lock* indicator light lights up.

   The device is in programming mode.
3. Press the **code change** softkey.

   The *code change* indicator light lights up.

   The display is blank.
4. Enter 0000 using the numerical keys.

   The lock code *0000* is displayed.
5. Check the entry.
6. To delete the entry, press the alphabetic key **C**.

DOMINIQUE DUTSCHER SAS

7. To confirm the entry, press the alphabetic key **E**.

   The *code change* indicator light goes out.

   The lock code is stored and deactivated.

8. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode.

6.7 Locking the device

Prerequisites:

- The lock code is activated.

1. After you have reprogrammed the device, press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode. The settings are saved.

If you press a softkey, e.g., **set temp**, while the *lock* indicator light is flashing, - - - - appears on the display. The control panel is locked.

6.8 Unlocking the device

Prerequisites:

- The lock code is activated.

1. Press the **lock** softkey.

   The *lock* indicator light flashes.

2. Enter the current lock code.

   The actual interior temperature is displayed.

   The *lock* indicator light lights up.

   The device is in programming mode. The settings can be changed.

DOMINIQUE DUTSCHER SAS

7 Operation

7.1 Opening and closing the door

Opening the door

CAUTION! Cryogenic burns

The temperature in the interior of the device is extremely low. Direct skin contact with interior surfaces or with stored items can cause cryogenic burns.

– Wear cold protection gloves when loading and unloading the device.

Protective equipment:

- Cold protection gloves

1. Unlock the cylinder lock if necessary.

   The outer door is unlocked.

2. Operate the door handle and pull open the outer door.

   If the outer door will not open, press the vent valve plunger to loosen ice on the inside of the chamber and allow the pressure to equalize.

3. Open only the inner door of the compartment in which you want to store samples.

If you load the device during the cooling phase, the cooling time specified in the technical data will not be reached.

- Load the device with the samples after the device has reached the set temperature.
- To minimize the increase in temperature due to the samples, load the device gradually.

Closing the door

CAUTION! Crushing injuries to hands

There is a risk of crushing your hand and fingers when you close the outer door or the inner door.

– Do not reach between the housing and the door.
– Lock the outer door slowly and carefully.

1. Close the inner doors.
2. Operate the door handle and close the outer door.

   Once the outer door is closed, pressure equalization will start if there is a pressure difference.

3. Lock the cylinder lock if necessary.

   The outer door is locked.

DOMINIQUE DUTSCHER SAS

7.2 Loading the device

To ensure energy-efficient operation of the device and optimum protection of the stored materials, the following measures are recommended.

Operate the device in a sustainable manner

1. Observe the following measures:
    - Avoid leaving the doors open for long periods.
    - Keep the stored materials organized.
    - Open only one inner door at a time.
    - Do not remove inner doors.
    - Keep the door seals clean and free of ice.
    - Clean the air filter regularly.

Keep stored materials safe

1. Observe the following measures:
    - Inspect and service the device regularly.
    - To be able to respond more quickly to temperature fluctuations, use external sensors and monitoring systems.
    - To keep the device cooled in the event of a mains/power outage, install a backup cooling system.
    - Store valuable materials in a separate device that is on its own circuit.

DOMINIQUE DUTSCHER SAS

8 Maintenance

8.1 Service

Eppendorf SE recommends having your device inspected and maintained at regular intervals by trained and skilled personnel.

Eppendorf SE offers customized service solutions for preventive maintenance, qualification and calibration of your device. For information, offers and contact options, visit our website www.eppendorf.com/epservices.

8.1.1 Service schedule

Interval	Maintenance work
If required	*Chapter 8.1.3 "Defrosting the device" on page 40*
	Chapter 8.2.1 "Cleaning the device" on page 41
	Chapter 8.2.4 "Cleaning the control panel" on page 43
	Chapter 8.2.5 "Decontaminating the inner door" on page 43
	Chapter 8.2.6 "Decontaminating the interior and the shelf" on page 45
Daily	*Chapter 8.1.4 "Checking the device for damage" on page 41*
Monthly	*Chapter 8.2.2 "Cleaning the air filter and the air intake grille" on page 42*
	Chapter 8.2.3 "Cleaning the seals" on page 43

8.1.2 Entering the offset for the temperature

If an external temperature sensor measures a different temperature than the display shows, the difference can be compensated with the offset.

You can set an offset for the set temperature in the interior in the range from 0 °C to -5 °C. The offset is added to the set temperature. The device cannot go below the temperature of -86 °C.

Prerequisites:

- The device is not protected by a lock code.

1. Press the **lock** softkey.

   The *lock* indicator light lights up.

   The device is in programming mode.

2. To delete the offset, press the alphabetic key **C**.
3. Enter the desired value using the numerical keys.

   The display shows the offset for the set temperature.

DOMINIQUE DUTSCHER SAS

4. To confirm the entry, press the alphabetic key **E**.

   The offset for the set temperature is saved.

5. Press the **lock** softkey.

   The *lock* indicator light goes out.

   The device is no longer in programming mode.

8.1.3 Defrosting the device



CAUTION! Risk of slipping

When you defrost the device, water may accumulate on the laboratory floor. This presents a slipping hazard.

– Immediately remove any water that has accumulated.



NOTICE! Damage to the device

Removing ice with a sharp object may damage the device.

– Wait until the ice has thawed by itself.

Protective equipment:

- Cold protection gloves

Material:

- "Defrosting device" notice sign
- Material for wiping up accumulated water
- Cloth

Prerequisites:

- The samples have been moved to another ULT freezer.
- The device is switched off and disconnected from the mains/power line.

1. Put up the notice sign.
2. Open the doors.
3. Wait until the ice has thawed.
4. Wipe up the accumulated water.
5. Dry the interior of the device with the cloth.

DOMINIQUE DUTSCHER SAS

8.1.4 Checking the device for damage

1. Check that the device, the control panel and the mains/power cord are undamaged.

   If the device, the control panel or the mains/power cord is damaged, inform your authorized service technician.

   Take the damaged device out of operation.

2. Check that the air intake grille is free of contamination.

   If contaminated, clean the air intake grille and the air filter.

8.2 Cleaning

8.2.1 Cleaning the device

Cleaning the interior of the device



DANGER! Electric shock

If you touch any parts which are under voltage, you may experience an electric shock. Electric shocks cause heart injury and respiratory paralysis.

– Switch off the device and disconnect the mains/power plug before commencing work on the device.

Material:

- Disinfectant with at least 70 % ethanol
- Deionized water
- Cloth

Prerequisites:

- The device is disconnected from the mains/power line.
- The device is defrosted.

1. Dampen the cloth with disinfectant.
2. Wipe the interior surfaces of the device with the cloth.
3. Allow the disinfectant to take effect.
4. Wipe off the disinfectant with deionized water.
5. Allow the interior surfaces of the device to dry.

DOMINIQUE DUTSCHER SAS

Cleaning the exterior of the device

Material:
- Water
- pH-neutral soap
- Cloth

1. Dampen a lint-free cloth with water and cleaning agent.
2. Clean the exterior surfaces of the device.

8.2.2 Cleaning the air filter and the air intake grille

The air filter protects the condenser and the assemblies behind it from dirt and dust. If the air filter is dirty, not enough air will reach the condenser. If the condenser overheats, the refrigeration cycle can fail.

Cleaning the air filter and the air intake grille

Protective equipment:
- Protective goggles
- Dust mask

Tool:
- Vacuum cleaner

Material:
- Water

1. Unscrew the screws on the air intake grille. Remove the air intake grille.
2. Take out the air filter.
3. Clean the air intake grille with the vacuum cleaner.
4. Remove coarse dirt from the air filter.
5. Clean the air filter with water.
6. Let the air filter dry.
7. Insert the air filter.
8. Fasten the air intake grille with the screws.

Confirming the *filter-clean* indicator light

1. After you have cleaned the air filter, press the numerical key **7** for 10 s.

   The *filter-clean* indicator light goes out.

   The display shows the interval until the air filter needs to be cleaned again.

DOMINIQUE DUTSCHER SAS

8.2.3 Cleaning the seals

Material:
- Cloth

1. Wipe all seals on the device with the cloth.
2. Wipe the surfaces opposite the seals with the cloth.

8.2.4 Cleaning the control panel

Material:
- Soap-based cleaning agent
- Disinfectant with at least 70 % ethanol
- Cloth

1. To lock the control panel, press the **lock** softkey.

   The control panel is locked.
2. Dampen the cloth with cleaning agent or disinfectant.
3. Clean the control panel.
4. To unlock the control panel, press the **lock** softkey.

   The control panel is unlocked.

8.2.5 Decontaminating the inner door

DANGER! Electric shock

If you touch any parts which are under voltage, you may experience an electric shock. Electric shocks cause heart injury and respiratory paralysis.

– Switch off the device and disconnect the mains/power plug before commencing work on the device.

NOTICE! Damage to the device and accessories

The use of unsuitable cleaning agents or sharp objects may damage the device and its accessories.

– Do not use any aggressive cleaning agents, strong solvents or abrasive polishes.
– Check the compatibility with the materials used.
– Do not clean the device with acetone or organic solvents with a similar effect.
– Do not use any sharp or pointed objects to clean the device.

DOMINIQUE DUTSCHER SAS

Removing the inner door

Prerequisites:

- The device is disconnected from the mains/power line.
- The device is defrosted.

1. Fully open the outer door of the device.
2. Fully open the inner door of the device.
3. Lift the inner door from its hinges.
4. Carefully set down the inner door.

Decontaminating the inner door

Material:

- Disinfectant with at least 70 % ethanol
- Deionized water
- Cloth

Prerequisites:

- The device is disconnected from the mains/power line.
- The device is defrosted.
- The inner door has been removed.

1. Dampen the cloth with disinfectant.
2. Wipe the inner door with the cloth.
3. Allow the disinfectant to take effect.
4. Wipe off the disinfectant with deionized water.
5. Allow the inner door to dry.

Reinstalling the inner door

Prerequisites:

- The device is disconnected from the mains/power line.
- The device is defrosted.

1. Fully open the outer door of the device.
2. Place the inner door on the hinge pins.
3. Close the inner door of the device.
4. Make sure the seal is flush against the edge of the inner door.
5. Close the outer door of the device.

DOMINIQUE DUTSCHER SAS

8.2.6 Decontaminating the interior and the shelf



DANGER! Electric shock

If you touch any parts which are under voltage, you may experience an electric shock. Electric shocks cause heart injury and respiratory paralysis.

– Switch off the device and disconnect the mains/power plug before commencing work on the device.



NOTICE! Damage to the device and accessories

The use of unsuitable cleaning agents or sharp objects may damage the device and its accessories.

– Do not use any aggressive cleaning agents, strong solvents or abrasive polishes.
– Check the compatibility with the materials used.
– Do not clean the device with acetone or organic solvents with a similar effect.
– Do not use any sharp or pointed objects to clean the device.

Material:

- Disinfectant with at least 70 % ethanol
- Deionized water
- Cloth

Prerequisites:

- The device is disconnected from the mains/power line.
- The device is defrosted.

1. Dampen the cloth with disinfectant.
2. Wipe the interior and the shelf of the device with the cloth.
3. Allow the disinfectant to take effect.
4. Wipe off the disinfectant with deionized water.
5. Allow the interior and the shelves of the device to dry.

DOMINIQUE DUTSCHER SAS

9 Troubleshooting

9.1 Control panel errors

Error description	Cause	Solution
The control panel does not respond.	The control panel is faulty.	Switch off the device and switch it back on again. Contact your local Eppendorf partner.

9.2 Outer door errors

Error description	Cause	Solution
The outer door cannot be opened.	The outer door is locked.	Unlock the mechanical lock.
	A padlock is attached to the door handle.	Unlock the padlock on the door handle.
	The vent valve is blocked. The outer door cannot be opened due to the negative pressure in the interior.	Press the vent valve plunger to loosen ice on the inside of the device and restore pressure equalization. Wait for the pressure to equalize. Pressure equalization usually takes a few minutes. After opening the outer door, remove the ice from the vent valve on the inside of the device.

9.3 Air filter errors

Error description	Cause	Solution
The *filter-clean* indicator light lights up.	The air filter is dirty.	Clean the air filter.

9.4 Software error messages

Error description	Cause	Solution
Code E-01	The temperature sensor that measures the interior temperature is faulty.	Contact your local Eppendorf partner.
Code E-02	The temperature sensor on the condenser is faulty.	Contact your local Eppendorf partner.
Code E-03	The temperature sensor on the heat exchanger is faulty.	Contact your local Eppendorf partner.

DOMINIQUE DUTSCHER SAS

Error description	Cause	Solution
Code E-04	The temperature at the condenser is too high.	Clean the air filter. Establish the ambient temperature. Contact your local Eppendorf partner.
Code E-05	The temperature sensor for the ambient temperature is faulty.	Contact your local Eppendorf partner.
Code E-06 – E-12; Code E-14 – E-20	There are internal errors.	Contact your local Eppendorf partner.
Code E-13	The fan is faulty.	Contact your local Eppendorf partner.

DOMINIQUE DUTSCHER SAS

10 Shut down

10.1 Switching off the device

Tool:

- Key for switch locking plate

Prerequisites:

- The samples have been transferred to another ULT freezer.

1. Open the switch locking plate and remove the cover.
2. Switch off the battery switch.
3. Switch off the mains/power switch.

   The device defrosts.
4. Replace the cover and close the switch locking plate.

10.2 Disconnecting the device from the voltage supply

Tool:

- Screwdriver

Prerequisites:

- The device is switched off.

1. Disconnect the mains/power plug from the earth/grounded socket.
2. Remove the safety clamp.
3. Disconnect the IEC connector from the device.

DOMINIQUE DUTSCHER SAS

11 Transport

11.1 Preparing the device for transport

Tool:

- Open-end wrench

Material:

- Adhesive tape
- Transport protection

Prerequisites

- The device has been taken out of operation.

1. Secure the air intake grille with the adhesive tape.
2. Attach a transport protection around the control panel.
3. Turn the leveling feet up using the open-end wrench.

11.2 Transporting the device



WARNING! Personal injury

The device is heavy. Improper lifting and moving of the device can lead to serious injuries.

– Transport the device only with a sufficient number of transport helpers.
– Use a suitable transport aid to move the device.
– Keep the door closed when the device is on the transport aid.



NOTICE! Damage to device

Tilting the device or transporting it in a horizontal position will damage the compressors and the refrigeration cycle.

– Transport the device in an upright position.
– Move the device with due caution and care. Protect the device from impacts.
– Do not subject the device to strong vibrations.

DOMINIQUE DUTSCHER SAS

Protective equipment:
- Protective clothing for transport
- Safety boots

Material:
- Original pallet
- Transport aid

Prerequisites:
- A sufficient number of transport helpers is available.

1. Transport the device in an upright position.
2. Hold the device by its housing and move it:
   - either with the castors
   - or secured on its original pallet with a transport aid, e.g., pallet truck

   The casters are only suitable for transport inside buildings.
3. On inclines, transport the device with one side panel to the front

   Do not transport the device over sloping surfaces with an angle > 10° (17 %).

11.3 Shipping the device

WARNING! Contamination
Shipping or storing a contaminated device may lead to contamination of persons or cause damage to health.
– Clean and decontaminate the device before shipping it or putting it into storage.

The device contains more than 100 g of flammable refrigerant and must not be shipped by air.

Material:
- Packing

Prerequisites:
- The device has been taken out of operation.
- The device has been cleaned and decontaminated.

1. Download the decontamination certificate for returning goods from our website www.eppendorf.com.
2. Complete the decontamination certificate.
3. Pack the device.

Use the original packing for transport. If the original packing is no longer available, please ensure that the device is sufficiently protected by replacement packing during storage and further transport. Eppendorf SE is not liable for damage caused by improper replacement packing.

DOMINIQUE DUTSCHER SAS

4. Attach the decontamination certificate to the outside of the packing so that it is safe for transport.
5. Ship the device.

DOMINIQUE DUTSCHER SAS

12 Disposal

12.1 Legal regulations

EU countries

In EU countries, the device must be disposed of in accordance with Directive 2012/19/EU. This directive has been transposed into national law by all EU member states. The device is marked with the following symbol:



Within the EU, batteries must be disposed of in accordance with Directive 2006/66/EC. This directive has been transposed into national law by all EU member states.

Non-EU countries

Non-EU countries have country-specific standards for the disposal of waste electrical and electronic equipment and the disposal of batteries and rechargeable batteries.

Disposal in the United Kingdom - Compliance with regards to UKCA regulatory requirements

Electrical and electronic equipment (EEE) is regulated to reduce the amount of waste regarding EEE. EEE producers must help to protect the environment and human health.

Reduction is achieved through various measures in terms of recovery, reuse and recycling of products and components.

For the United Kingdom (UK) 'The Waste Electrical and Electronic Equipment Regulations 2013 (as amended)' is the underpinning UK legislation.

Exempted products from this regulations are:

- Items that protect the country's security such as arms, munitions, and items only for military use.
- A piece of equipment that is designed for and installed in another type of equipment – they can only function within that product, for example a built-in satellite navigation system installed into cars, boats or aeroplanes.
- Filament bulbs apart from LED filament bulbs which are not exempt.

Products that can be used for both military and civil purposes, such as laptops or keyboards, are EEE products.

Excluded products from this regulations are:

- Equipment designed to be sent into space
- Large scale stationary industrial tools
- Large scale fixed installations
- Transport for persons or goods, excluding electric 2 wheeled vehicles which are not type-approved
- Off-road mobile machinery only for professional use

DOMINIQUE DUTSCHER SAS

- Equipment designed only for research and development use and only available via business to business (B2B)
- Implantable medical devices
- Medical devices that are expected to be infective at end-of-life

The aformentioned regulations obliges producers of EEE to help protect natural resources and manage waste of EEE in the best way for people and the environment as well.

EEE is defined as follows:

- which is dependent on electric currents or electromagnetic fields to work properly.
- for generating, transferring and measuring these currents and fields.
- designed for use with a voltage rating 1,000 volts or less for alternating current, and 1,500 volts or less for direct current.

'Dependent on electric currents or electromagnetic fields to work properly' means that the equipment needs electric currents or electromagnetic fields (not petrol or gas) to fulfil its basic function. So when the electric current is off, the equipment cannot fulfil its basic function.

Where electrical energy is only used for support or control functions, the equipment is not covered by the regulations. Equipment that only needs a spark to start it (electronic ignition) and does not need electricity to fulfil its basic function includes:

- petrol lawn mowers,
- gas stoves.

Products that are not connected to a mains supply may still be EEE. They can be wind-up, battery-powered and solar-powered products. Where a product has several functions and only one needs an electrical current, the product may still be EEE.

Information on the disposal of Electrical and Electronic Equipment in the United Kingdom:

Within the United Kingdom, the disposal of Electrical and Electronic Equipment (EEE) is regulated by national regulations based on Waste Electrical and Electronic Equipment Regulations 2013 (as amended) applicable for EEE.

According to this regulation, any devices put on the market after August 13, 2005, in the business-to-business sphere, to which this product is assigned, may no longer be disposed of in municipal or domestic waste. They are marked with the following symbol to indicate this:



As the disposal regulations may differ from one country to another, please contact your supplier for more information.

DOMINIQUE DUTSCHER SAS

12.2 Preparing for disposal

Preparing disposal in accordance with legal regulations

For information on the legal regulations that apply in your country, please contact your local competent authority or your Eppendorf partner.

Dispose of non-decontaminable devices as hazardous waste.

1. Check which legal regulations apply to disposal in your country.
2. Choose a certified disposal company or contact your Eppendorf partner.

Removing batteries and rechargeable batteries

1. Check whether your device contains permanently installed batteries or rechargeable batteries.
2. Only remove the batteries and rechargeable batteries that are not permanently installed.
3. Dispose of the removed batteries and rechargeable batteries in accordance with the legal regulations of your country.

Creating a decontamination certificate

Prerequisite:

- The device has been decontaminated.

1. Download a decontamination certificate from our webpage www.eppendorf.com.
2. Complete the decontamination certificate.

12.3 Handing over the device to the disposal company

1. Inform the disposal company of any hazards posed by the device, e.g., locking devices, flammable substances.
2. Hand over the device and the decontamination certificate to the certified disposal company.

DOMINIQUE DUTSCHER SAS

13 Technical data

13.1 Dimensions

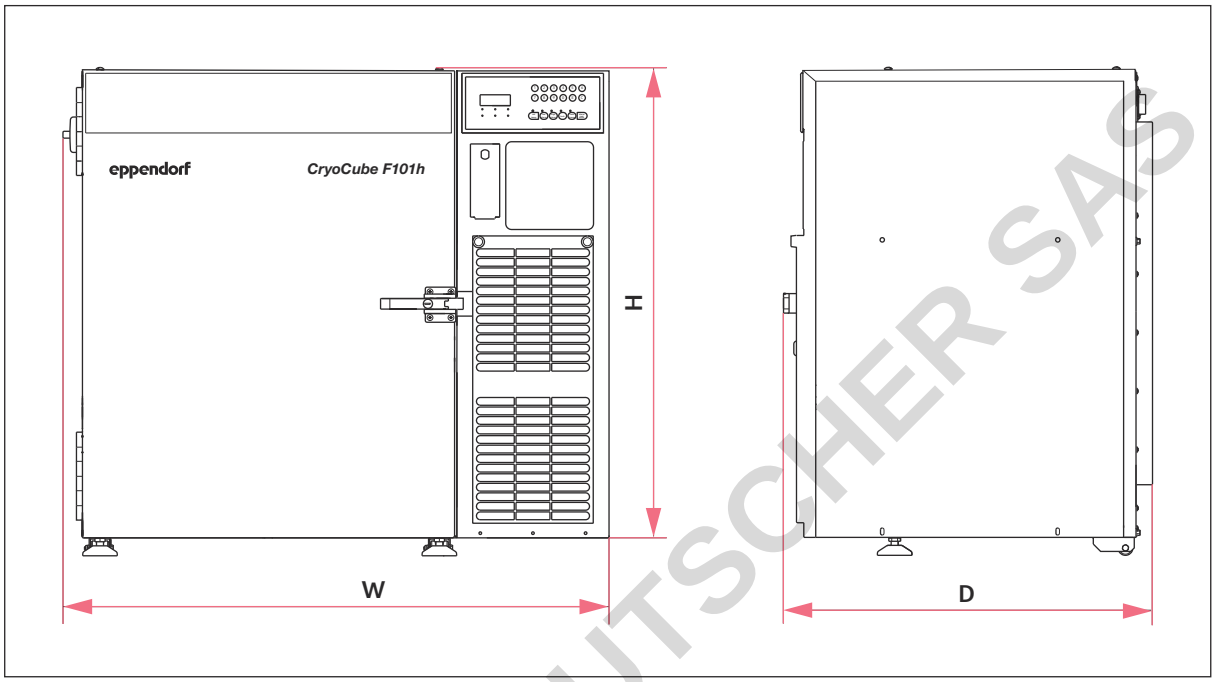


Fig. 13-1: External dimensions

H 800 mm

W 936 mm

D 629 mm

Inner diameter of the access ports	21.5 mm ± 0.5 mm

DOMINIQUE DUTSCHER SAS

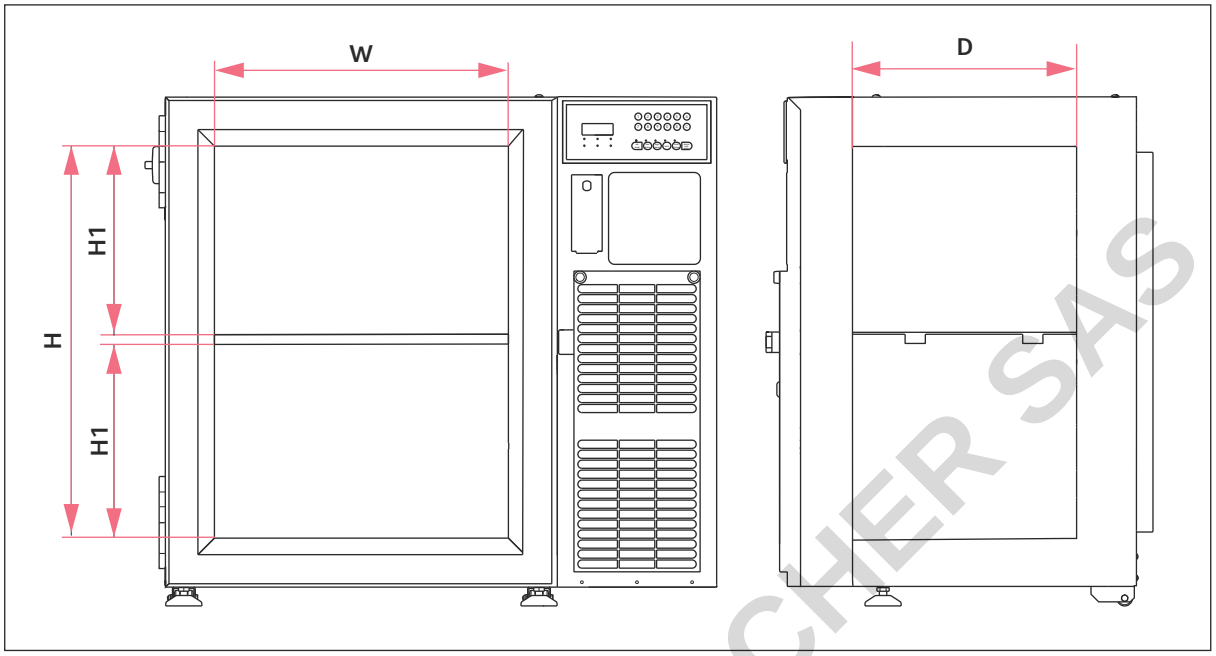


Fig. 13-2: Internal dimensions

W	480 mm	H	640 mm
D	330 mm	H1	320 mm

13.2 Weight

Device	123 kg
Packaged device	153 kg

13.3 Ambient conditions

Operation

Environment	For indoor use only
Ambient temperature	15 °C – 32 °C
Relative humidity	Maximum 80 %, non-condensing
Atmospheric pressure	80 kPa – 106 kPa

Transport

Air temperature	20 °C – 35 °C
Relative humidity	10 % – 91 %
Atmospheric pressure	30 kPa – 100 kPa

DOMINIQUE DUTSCHER SAS

Storage

Air temperature	20 °C – 35 °C
Relative humidity	10 % – 91 %
Atmospheric pressure	30 kPa – 100 kPa

13.4 Current consumption

Mains/power supply voltage and frequency	F101340061	230 V, 50 Hz
	F101240065	115 V, 60 Hz
Current consumption	F101340061	230 V (50 Hz) 5 A
	F101240065	115 V (60 Hz) 10 A
Electromagnetic compatibility	The device meets the following requirements: DIN EN 61326-1 DIN EN 55011 (CISPR 11) FCC Part 15, Class A	
Overvoltage category	II	
Pollution degree	2	
Specification for mains/power cord	3-wire, 14 AWG, voltage and amperage as specified on the device name plate Device connector C19 according to IEC 60320 Power cord must comply with regulations valid at country of operation of the device.	

13.5 Noise level

F101340061	230 V, 50 Hz	< 39.7 dBA
F101240065	115 V, 60 Hz	< 43.2 dBA

13.6 Interface

Building management system	1 potential-free contact max. 24 V, max. 1 A

13.7 Capacity and load

Capacity	101 L
Carrying capacity per shelf	30 kg (with an evenly distributed load)

DOMINIQUE DUTSCHER SAS

13.8 Cooling

Temperature range

Setting range	-50 °C to -86 °C

13.9 Materials

Insulation	Vacuum insulation panels Polyurethane foam
Interior	Stainless steel (304 2B)

DOMINIQUE DUTSCHER SAS

14 Ordering information

14.1 Accessories

Back-up systems

Description	Order no.
CO_2 backup system	
120 – 220 V/60 Hz	U9043-0002
230 V/50 Hz	U9043-0004
LN_2 backup system	
120 – 220 V/60 Hz	U9044-0002
230 V/50 Hz	U9044-0004

Chart recorder

Description	Order no.
Chart recorder (type I)	P0625-2100
Chart recorder paper (type I) -50 to -100 °C, 60 pieces	P0625-2110
Chart recorder pens (type I) 3 pieces	K0660-0051

Shelf

Description	Order no.
Shelf for CryoCube F101h, 1 piece	F652999009
Mounting clip for pilaster rail 4 pieces	F651999690

Padlock adapter

Description	Order no.
Padlock adapter for CryoCube F101, 1 piece	F652999010

Stacking kit

Description	Order no.
Stacking kit for CryoCube F101h, 1 piece	F652999011

DOMINIQUE DUTSCHER SAS

Racks, Eppendorf Storage Boxes, cardboard boxes and box dividers

Current ordering information can be found on our website www.eppendorf.com.

DOMINIQUE DUTSCHER SAS

15 Index

A

Acclimatization 26, 31

Air filter 46

Alarm 23
- Battery 23, 28
- Mains/power outage 23, 28
- Temperature 23, 28, 33

Alarm limit 23, 32

Authorized service technician 10

B

Backup systems 21

C

Cleaning
- Cleaning the control panel 43
- Cleaning the device 41
- Cleaning the seals 43
- Decontaminating the interior 45
- Decontaminating the shelf 45
- Defrosting the device 40
- Removing and decontaminating the inner door 43

Connection
- Mains/power line 28

Control panel 46

D

Decontamination certificate 50

Delivery package 25

Device
- Warning signs 12

Disposal 52

L

Lock
- Mechanical lock 37, 46

Lock code 36
- Activate 34
- Deactivate 35

M

Mains/power outage 21, 28

Manual
- Symbols 6

O

Optional accessories 21, 22

Ordering information
- Accessories 59

Owner 10, 11, 28
- Profile 10

P

Packing
- Original packing 50
- Replacement packing 50

Port
- Mains/power line 48

Pressure equalization 37, 46

Protective clothing 11

R

Refrigerant 24, 46, 58

DOMINIQUE DUTSCHER SAS

S

Safety
Protective clothing 11
Warning notice structure 6

Setting the temperature 31

Space requirements 24

T

Technical personnel 10

U

User 10

V

VisioNize connection 21

W

Warning notice
Structure 6

Warning signs 12

DOMINIQUE DUTSCHER SAS

DOMINIQUE DUTSCHER SAS

Evaluate Your Manual

Give us your feedback.
www.eppendorf.com/manualfeedback

DOMINIQUE DUTSCHER SAS

Your local distributor: www.eppendorf.com/contact
Eppendorf SE · Barkhausenweg 1 · 22339 Hamburg · Germany
eppendorf@eppendorf.com · www.eppendorf.com