

# Innova® U101

## Looking for a compact under-the-bench ULT freezer?

Eppendorf Innova ultra-low temperature (ULT) freezers combine classical insulation foam with vacuum insulation panels to offer long lasting and reliable ULT technology for safe sample storage.



## Product Information

When it comes to maximizing sample storage capacity, Eppendorf Innova ULT Freezers set the standard. They take advantage of ultra-efficient, ultra-compact vacuum insulation panels which are used in combination with traditional insulation to slim down the freezer wall thickness from 130 mm to 80 mm. These models are ideal for labs short on space. The upright model Innova U101 has a limited footprint, especially designed for small labs. The Innova U101 is a personal ULT freezer which fits below a standard bench (stackable as option).



## PhysioCare

Besides sustainability, the main focus of our freezers is on ergonomic aspects. Easy closing of the outer door, ergonomic door handle, or easy-to-clean stainless steel interior are based on the Eppendorf PhysioCare Concept: Safe grip but very light forces needed to open and close the freezer door.

## Sample safety

The Innova line is equipped with reliable heavy-duty compressors (2-stage cascade cooling system). Quick pull-down times enable fast re-use after cleaning/defrosting of the instrument. The freezers have short recovery times after opening as well as built-in voltage stabilizers to provide extra sample safety. Their temperature range is from -50 °C to -86 °C. For even higher sample safety, the Eppendorf Innova upright freezers can be equipped with CO<sub>2</sub>/LN<sub>2</sub> back-up systems and a chart recorder. Temperature monitor systems can be used to monitor the freezers remotely.

## Sustainability

Sustainability for ULT freezers is a challenge: Maintaining extremely low temperatures of -86 °C for 24 hours a day, 7 days a week needs energy.

By following the epGreen concept, the Eppendorf freezer R&D team developed intelligent solutions where energy savings are combined with durable long-lasting product quality and ergonomic aspects. This future-oriented instrument class provides consumption levels which are ahead of most competitors within this volume class.

Eppendorf Ultra-Low Temperature freezers are among the most energy-efficient in the industry, reducing energy consumption by thousands of kilowatt hours over our competition.

## Factors influencing the energy consumption

- Thickness of insulation
- Type of insulation
- Type of cooling liquid
- Efficiency of compressors
- Control of compressor
- Pressure in cooling system
- Style of cooling loops (diameter, length, density,...)
- Sealings of outer door
- Sealings of inner doors
- Insulation of inner doors
- Insulation of outer door



## Our part for sustainability

- Production moved into new building with state-of-the-art building insulation to save heating energy and power
  - Heat output during final individual unit testing discharges building heating system
  - Plastic and cardboard compactors introduced + waste rebate system in place
  - Local requirements for waste management (collection of electronic waste like circuit boards, recycling via authorized recycling organizations) and internal guide lines
  - Usage of green cooling liquids in Eppendorf ULT freezers for 10 years
  - Packaging parts have increasing share of recycled origin
  - Packaging is more than 99% recycable (wood, cardboard, PE-foil)
  - REACH + RoHS compliant
  - ENERGY STAR® partner
  - Marketing material is printed on FSC certified paper, wherever possible focus on pdf only
- Shipment by cargo ship to reduce CO<sub>2</sub> footprint

## Features

- Vacuum insulation panels allow for increased internal capacity with the same footprint as traditionally foamed freezers
- Inner doors are gasketed as well as insulated creating 3 separate compartments minimizing cold air loss while you access your samples
- Easy-to-read, eye level, flush mounted LED control panel and alarm status
- Each shelf is adjustable in height for additional storage flexibility
- Special vacuum vent with plunger ergonomically located at waist level to gain immediate access to your freezer
- Inner doors can be quickly removed without the need for tools for easier and faster defrosting
- Full stainless steel interior for easy cleaning during maintenance and defrost cycles; powder-coated steel exterior
- Special low-temperature outer door seals allow gaskets to remain flexible at  $-86^{\circ}\text{C}$  and prevent ice buildup for easy access to samples
- Password protection of alarm and temperature setpoints to prevent unauthorized setting changes

## Applications

ULT freezers are suitable for storage and preservation of all types of biological materials/samples:

- Bacteria
- Cells
- Spores
- Pollens
- Protozoa
- Blood components
- DNA
- Tissue used in research only
- Preservation of chemicals or material testing components for a longer period of time

## Innova® U101

Cooling liquid	R404A / R508B
Cooling type	air-cooled
Heat output	344 W
Insulation	Vacuum insulation paneling / polyurethane foam
Capacity	101 L
Capacity (ft <sup>3</sup> )	3.6 ft <sup>3</sup>
No. of internal doors	2
No. of compartments	2
Max. racks per freezer	6
Noise level	55 dBA
High-Efficiency	no
Power supply	115 V, 60 Hz
Max. power consumption	7,400 W
Footprint (WxD)	90 x 56.6 cm
Temperature range	-50 °C to -86 °C
Pull-down time to -80 °C	3 h <sup>1</sup>

### Box capacity per freezer

53 mm (2 in) tall boxes	60
64 mm (2.5 in) tall boxes	48
76 mm (3 in) tall boxes	36
102 mm (4 in) tall boxes	24
127 mm (5 in) tall boxes	24

### Box capacity per rack

53 mm (2 in) tall boxes	10
64 mm (2.5 in) tall boxes	8
76 mm (3 in) tall boxes	6
102 mm (4 in) tall boxes	4
127 mm (5 in) tall boxes	4

<sup>1</sup>Empty freezer with shelves fitted, upright freezers only, pull down from 21 – 23 °C ambient conditions.