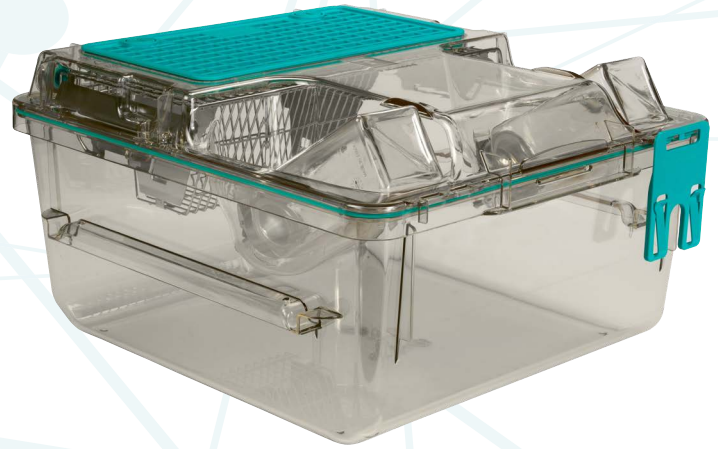




Emerat 1050 is the new experimental IVC for rats characterised by an increased floor area, allowing the housing of more animals of the most used size while keeping the external cage volume to a minimum.

Its latest generation design provides the best ergonomic solution for operators, thanks to successful innovations such as SmarTop, Vision+, runners with built-in handles and all-in-one racks. At the same time, ER1050 enhances animal welfare by providing a spacious environment during experiments where rats can express their natural behaviour patterns.



INNOVATION

▶ SMARTOP

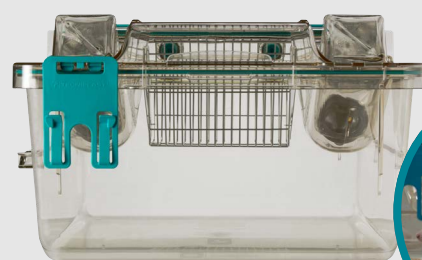
EMERAT's well-known, PATENTED SmarTop provides the best ergonomic solution for the operator by reducing twisting of the wrists and arms whilst allowing easy access to animals. The SmarTop system facilitates cage-changing procedures. Its design minimises the risk of cage contamination and reduces the space occupied under the laminar flow cabinet, which is key when working with rat cages.



SMARTOP

▶ VISION+

The latch-free innovative design guarantees unrivalled visibility, providing a clear, unrestricted view and allowing efficient daily health and welfare checks. The Tecniplast PATENTED cage sealing design, combined with the in-bedded locking system, ensures optimal protection for animals and operators; simply place the top on the cage to achieve perfect sealing every time.



VISION+



▶ ALL-IN-ONE RACKS

Two great IVC rack styles to meet every facilities requirement. Whether positioned at the top or bottom, the **ERGO rack** allows operators easy access to all cages in any position. If space is at a premium, the **HD rack** optimises space, reduces running costs and is the perfect solution to increase cage density without taking up more space in the vivarium.





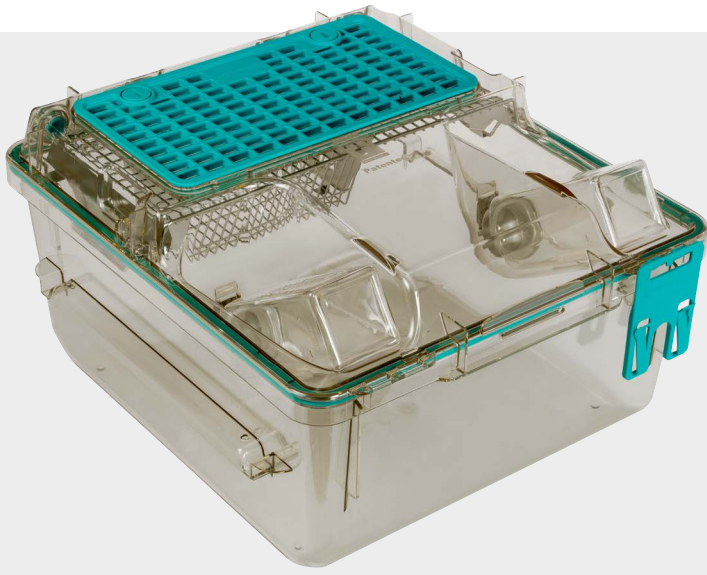
TECHNICAL FEATURES

► CAGE DESIGN

ER1050 is available in **H-TEMP (Polysulfone)**.

The cage body's **new pocket-shaped runners** allow the cage to be carried with ease, allowing for more comfortable cage handling. The new **Stainless Steel raised lid** provides an **internal height of 20 cm**. The lid design allows the easiest and quickest access to the cage occupants, speeding up the cage change procedures and maximising ergonomics. Manufactured from high-quality certified **AISI304 Stainless Steel**.

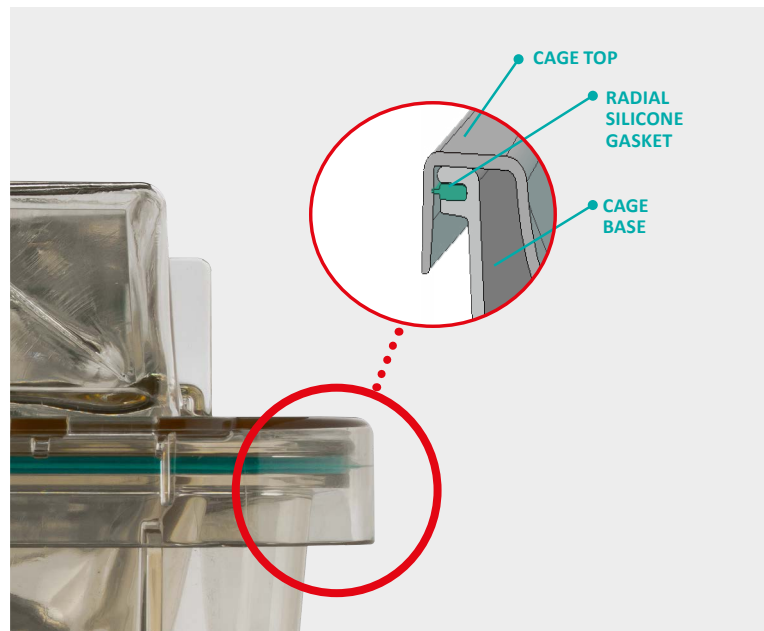
The **cage top** features one large microbiological filter with an average certified **Virus Filtration Efficiency (VFE) of 99.97%** and **Bacteria Filtration Efficiency (BFE) of 99.99%**, which has demonstrated guaranteed life support in the event of a power failure. The microbiological filter installed ensures that a **pressure differential can be maintained**. Furthermore, the filter guarantees **no biological agents or allergens** can transfer to or from the cage, contributing positively to the animals' health status and operator safety.



► SEALING

EMERAT cages feature a **PATENTED cage design**, consisting of a soft radial silicone gasket that protrudes around the rim of the cage base: a perfect seal is achieved by placing the top onto the cage body through the radial connection between the gasket and cage top. Additionally, the vertical compression (commonly provided using latches) of the silicone gasket between the cage base and the top is not required:

- No latches for improved ergonomics.
- No latches are required to achieve containment and high protection.



► AIRFLOW PATTERN

Air inlet and outlet valves are located in the top: no air drafts at animal level, avoiding the risk of stress and heat loss, as reported in the scientific literature. Cage air valves are **protected by two silicone O-Rings** to provide a good-quality seal when the cage is undocked from the rack.

Non-invasive rack supply and exhaust nozzles external to the cage are protected from the environment, thus preventing cross-contamination yet maintaining operator protection.

► BOTTLE

The **external water bottle**, together with the self-centering bottle depression design, ensures easy and quick access to the bottle without removing the cage from the rack. The bottle has a **silicone gasket around the neck**, reducing the risk of leaks and providing an easy decapping process.

Manufactured from **welding-free AISI 316 Stainless Steel**, the bottle cap features a **silicone O-ring on its sipper stem**, creating a perfect coupling with the top when the bottle is in position, providing maximum sealing and protection.



► **CARD HOLDER**

The **universal plastic card holder** is compatible with any label and can be easily flipped up. It is designed to feature a **unique shape** that allows you to easily unlock the filter retainer when replacing the microbiological filter.



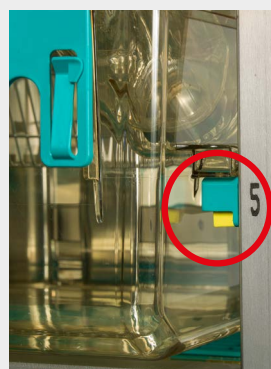
► **RACK**

The rack frame is manufactured from **high-quality AISI 304 Stainless Steel** and features **special polyamide runners** for cage accommodation. The racks are available in **7 and 8 rows** maximising cage density without compromising user ergonomics. The configuration with **3, 4 and 5 columns** optimises space within the facility's overall cage capacity to fit every need.

The vertical design of the exhaust plenums allows particles extracted from the cage (food, bedding, debris, etc ...) to fall by gravity into the removable horizontal exhaust plenum. **The removal of the horizontal supply and exhaust plenums is tool-free and can easily be performed by a single operator.**

The **automatic visual docking indicator** allows a clear and immediate indication that cages are correctly/incorrectly docked.

The rack is equipped with **Polyphenylsulfone (X-TEMP) castors**. This plastic has outstanding thermal and mechanical resistance, providing a long lifespan perfectly, withstanding many autoclave cycles. Moreover, the very low force required to enable/disable the brakes makes these castors extremely ergonomic. The racks and the Air Handling Unit are connected by a **silicone flexible connection with autoclavable plastic components**. Connections have been designed to make the installation easy and intuitive. Optional **magnetic connections** are also available.





► AIR HANDLING UNIT

Wi Flow, Smart Flow, Easy Flow, Clima Flow and Sky Flow are microprocessor-driven (automatic constant flow rate and filter load compensation), ensuring safety for animals, operators, and the environment. Tecniplast AHUs are equipped with **New DC Electronically Commuted Motors (ECM): 50% less power consumption and 90% less heat loss** than the previous generation AHUs, securing a longer lifespan.

The **multi-linking feature allows the connection of multiple racks to a single AHU, reducing maintenance and consumables costs.**

Both the supplied and exhausted air is filtered by two **G4 pre-filters and two H14 HEPA filters**, one for the supply and one for the exhaust: the HEPA filters have a **certified**

filtration efficiency of 99.995% at the most penetrating particle size and are **DOP tested** once installed in the machine.

- **ONE 2 ONE:** allows each single AHU to be controlled via any portable device through a modern interface. One control device for all AHUs.
- **GUARDIAN:** the system allows all AHUs in the facility to be remotely monitored and controlled. Users receive notifications in the event of an alarm and can record all environmental parameters. Guardian provides you with global viewing and remote control of your AHUs.



ENVIRONMENTAL SUSTAINABILITY: MINIMISE IMPACT MAXIMISING VALUE.

WHAT TECNIPLAST HAVE ACHIEVED TO BECOME A LEADER IN SUSTAINABILITY:

COMPANY:

- Quality Management System Certification according to ISO 9001:2015
- Environmental Management System according to ISO 14001:2015
- Ecodesign according to ISO 14006:2020
- Certified Environmental Report according to Eni Foundation Enrico Mattei Guidelines, to ISO 14016:2020 and General Reporting Initiative Standards (GRI).

PRODUCTS:

- Life Cycle Assessment (LCA) according to ISO 14040 and ISO 14044.
- Carbon Footprint according to PAS 2050.
- Environmental Data Sheet according to ISO 14025.


TECHNICAL DATA: RACKS

RACK CONFIGURATIONS & DESIGNATIONS			
	Code	Rack capacity	Overall Rack Dimensions (LxWxH)
ERGO	ER1021X	21 cages (3W x 7H) – single sided	1183 x 500 x 1818 (1944*) mm 46.57 x 19.69 x 71.57 (76.53*) in
	ER1028X	28 cages (4W x 7H) – single sided	1562 x 500 x 1818 (1944*) mm 61.51 x 19.69 x 71.57 (76.53*) in
	ER1035X	35 cages (5W x 7H) – single sided	1949 x 500 x 1818 (1944*) mm 76.75 x 19.69 x 71.57 (76.53*) in
	ER1042X	42 cages (3W x 7H) – double sided	1183 x 888 x 1818 (1935*) mm 46.57 x 34.96 x 71.57 (76.16*) in
	ER1056X	56 cages (4W x 7H) – double sided	1562 x 888 x 1818 (1935*) mm 61.51 x 34.96 x 71.57 (76.16*) in
	ER1070X	70 cages (5W x 7H) – double sided	1949 x 888 x 1818 (1935*) mm 76.75 x 34.96 x 71.57 (76.16*) in
HD	ER1024X	24 cages (3W x 8H) – single sided	1183 x 500 x 1995 (2071*) mm 46.57 x 19.69 x 78.54 (81.53*) in
	ER1032X	32 cages (4W x 8H) – single sided	1562 x 500 x 1995 (2071*) mm 61.51 x 19.69 x 78.54 (81.53*) in
	ER1040X	40 cages (5W x 8H) – single sided	1949 x 500 x 1995 (2071*) mm 76.75 x 19.69 x 78.54 (81.53*) in
	ER1048X	48 cages (3W x 8H) – double sided	1183 x 500 x 1995 (2072*) mm 46.57 x 19.69 x 78.54 (81.53*) in
	ER1064X	64 cages (4W x 8H) – double sided	1562 x 888x 1995 (2072*) mm 61.51 x 34.96 x 78.54 (81.56*) in
	ER1080X	80 cages (5W x 8H) – double sided	1949 x 888 x 1995 (2072*) mm 76.75 x 34.96 x 78.54 (81.56*) in

* With easily removable supply plenum

TECHNICAL DATA: CAGE

CAGE DATA						
Cage	Cage size				Feeder Capacity	Water Bottle Capacity*
	Width	Depth	Height	Floor Area		
ER1050	369 mm 14.52 in	414.3 mm 16.27 in	220.4 mm 8.67 in	1062 cm ² 164.61 in ²	1.2 L - 40.57 oz (US) 42.23 oz (UK)	312 ml – 10.5 oz (US) 11 oz (UK)

* Two bottles per cage



OPTIONS AND ACCESSORIES

▶ OPTIONS FOR CAGE

- Cage body with grommet, for auto watering
- Flat Top for AWS
- Cage Top for disposable water pouches

▶ OPTIONS FOR RACK AND AHU

- Rack with automatic watering system
- Quick disconnecting magnetic joints (connecting AHU to rack or rack to rack)
- Flexible hoses (available in several lengths)
- Thimble for HVAC integration

▶ TEST REPORTS

- Performance test – Airborne noise conditions inside cages
- Performance test – Light Intensity inside cages
- Performance test – Airflow velocity inside cages
- Performance test – Consistency of relative pressure and ACH with only one cage mounted on the IVC rack
- Performance test – Distribution of relative pressure and ACH across IVC racks
- Performance test – Breakaway force for rack movement

▶ WHITE PAPERS

- Monitoring of environmental conditions in EMERAT 1050 Individually Ventilated Cage

▶ FILTER CERTIFICATIONS

- Microbiological filter Viral Filtration Efficiency (VFE) evaluation
- Microbiological filter Bacterial Filtration Efficiency (BFE) evaluation