TECNIPLAST
innovation through passion

INDIVIDUALLY VENTILATED CAGES



HOUSING





TECNIPLAST HAS BEEN INVOLVED FOR MORE THAN 60 YEARS IN THE FIELD OF LAB ANIMAL RESEARCH AND IN ITS INNOVATIONS TO ACHIEVE THE CHALLENGING GOALS SET BY THE SCIENTIFIC RESEARCH.

THE ORIGINAL NEED TO HAVE JUST A "CONTAINER" FOR RODENTS HAS EVOLVED OVER TIME TO MEET THE NEED OF A RANGE OF PRACTICAL, SCIENTIFIC REQUIREMENTS.

THESE INCLUDE: HEALTH STATUS, BIO-CONTAINMENT OR BIO-EXCLUSION, SEPARATION OF SMALL GROUPS OF ANIMALS, SPACE SAVING, ERGONOMICS, PRACTICALITY OF USE, AND LAST BUT NOT LEAST, ANIMAL AND HUMAN WELFARE. COMPLIANCE WITH THESE CRITERIA IS ESSENTIAL IN ORDER TO AVOID UNDESIRABLE VARIABLES AND ACHIEVE RELIABLE SCIENTIFIC OUTCOMES. THE STATE OF ART IN TERMS OF CAGING SYSTEMS FOR RODENTS IS REPRESENTED BY MODERN INDIVIDUALLY VENTILATED CAGES (IVCs).

IMPROVING THE OUTCOME OF BIOMEDICAL RESEARCH REQUIRES MORE THAN JUST KEEPING PEOPLE SAFE AND ENSURING ANIMAL WELL-BEING – IT REQUIRES US TO PARTNER WITH OUR CLIENTS. ONLY IN THE SPIRIT OF TRUE PARTNERSHIP AND SUPPORT WE CAN HELP OUR CLIENTS TO ACHIEVE THEIR GOALS.

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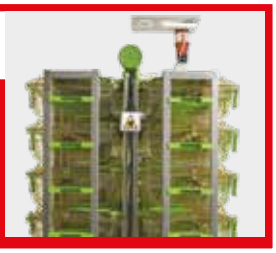


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EMERALD LINE



FOR MICE

EM500

EMERALD LINE



FOR RATS AND MICE

ER1050

EMERALD LINE



FOR RATS

ER1800

EMERALD LINE

EMERALD IS THE NEW, REVOLUTIONARY, INDIVIDUALLY VENTILATED CAGE. IT PROVIDES LEADING PERFORMANCE FOR ANIMAL AND OPERATOR PROTECTION, ERGONOMICS AND WELFARE. THANKS TO SUCCESSFUL INNOVATIONS SUCH AS VISION+, IN-RICHMENT, SMARTOP AND ALL-IN-ONE-RACK, EMERALD BRINGS HOUSING STANDARDS TO A HIGHER LEVEL

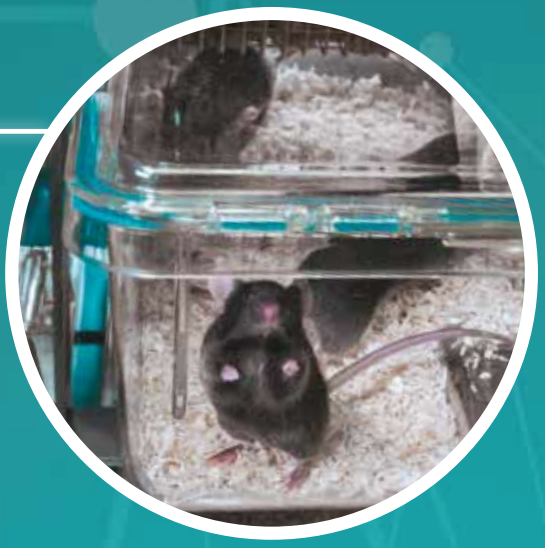
EM500

EMERALD IVC

A GEM OF INNOVATION

VISION +

- **The daily cage inspection has never been so easy:** EMERALD full visibility is guaranteed by the latch free innovative design
- **Optimal protection for both animals and operators** assured by Tecniplast PATENTED* cage sealing design together with the in-bedded locking system: simply place the top on the cage to achieve perfect sealing



100% CLEAR VIEW TO EASE DAILY HEALTH CHECK



PATENTED!*

A STEF FORWARD THE ANIMAL WELFARE... *IN*-BEDDED!

IN–RICHMENT

A mouse cage + an enrichment device all in one!

- **Increased animal welfare** thanks to the raised section in-bedded in the EMERALD cage base that provides an area for resting, nest building, exploring, social contacts and exercise
- **More reliable scientific outcomes** as EMERALD promotes the expression of positive behavior patterns
- **Minimized potential contamination:** no need to purchase and separately process additional cage inserts

SMARTOP



PATENTED!*

- **Better Ergonomics for Operators:** accessing your mice is now easier than ever! EMERALD SmarTop allows the cage top to be vertically positioned on the base
- **Streamline cage changing procedure:** SmarTop features an easy, reproducible, standardized motion that guides the operators through the process of cage changing
- **Contamination always under control** by minimizing the working area occupancy, a crucial aspect when applying aseptic techniques

THE EASIEST, MOST ERGONOMIC AND SAFEST WAY TO ACCESS YOUR ANIMALS



FLOOR AREA:
535 CM^2/83.93 IN^2



EM500

ALL-IN-ONE RACKS

CAPACITY, COMFORT
OR BOTH:
THE CHOICE IS YOURS!

- **Capital investment and running cost savings** thanks to the increased cage density that optimizes floor space
- **Versatility**: three different IVC rack styles, select the one that suits your Facility's needs
- **Best ergonomics**: a rack design with operator ergonomics in mind



HD RACK

12 ROWS IN AROUND 2 MT/80" OF HEIGHT, TO INCREASE CAGE DENSITY BY +20%

COMFORT RACK

11 ROWS TO INCREASE CAGE DENSITY BY 10%, KEEPING RACK HEIGHT COMPARABLE TO THOSE CURRENTLY AVAILABLE ON THE MARKET: THE BEST COMPROMISE BETWEEN CAPACITY AND ERGONOMICS

ERGO RACK

10 ROWS, **EASILY INSPECTABLE AT A CONVENIENT HEIGHT**: SIGNIFICANT ERGONOMIC IMPROVEMENTS



HD RACK:
+20% CAGE DENSITY

Cage	Rack configuration	
EM500	EMM072X	72 cages (6w x 12h), single sided
	EMM084X	84 cages (7w x 12h), single sided
	EMM096X	96 cages (8w x 12h), single sided
	EMM144X	144 cages (6w x 12h), double sided
	EMM168X	168 cages (7w x 12h), double sided
	EMM192X	192 cages (8w x 12h), double sided

COMFORT RACK:
CAPACITY AND ERGONOMICS

Cage	Rack configuration	
EM500	EMM066X	66 cages (6w x 11h), single sided
	EMM077X	77 cages (7w x 11h), single sided
	EMM088X	88 cages (8w x 11h), single sided
	EMM132X	132 cages (6w x 11h), double sided
	EMM154X	154 cages (7w x 11h), double sided
	EMM176X	176 cages (8w x 11h), double sided

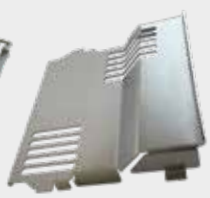




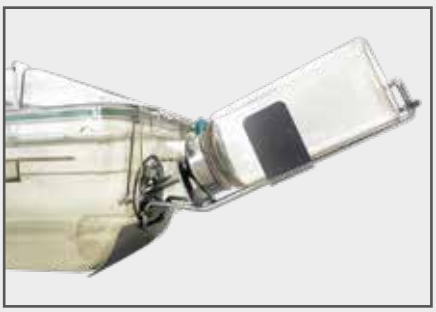
ERGO RACK:
SIGNIFICANT ERGONOMIC IMPROVEMENT

Cage	Rack configuration	
EM500	EMM060X	60 cages (6w x 10h), single sided
	EMM070X	70 cages (7w x 10h), single sided
	EMM080X	80 cages (8w x 10h), single sided
	EMM120X	120 cages (6w x 10h), double sided
	EMM140X	140 cages (7w x 10h), double sided
	EMM160X	160 cages (8w x 10h), double sided

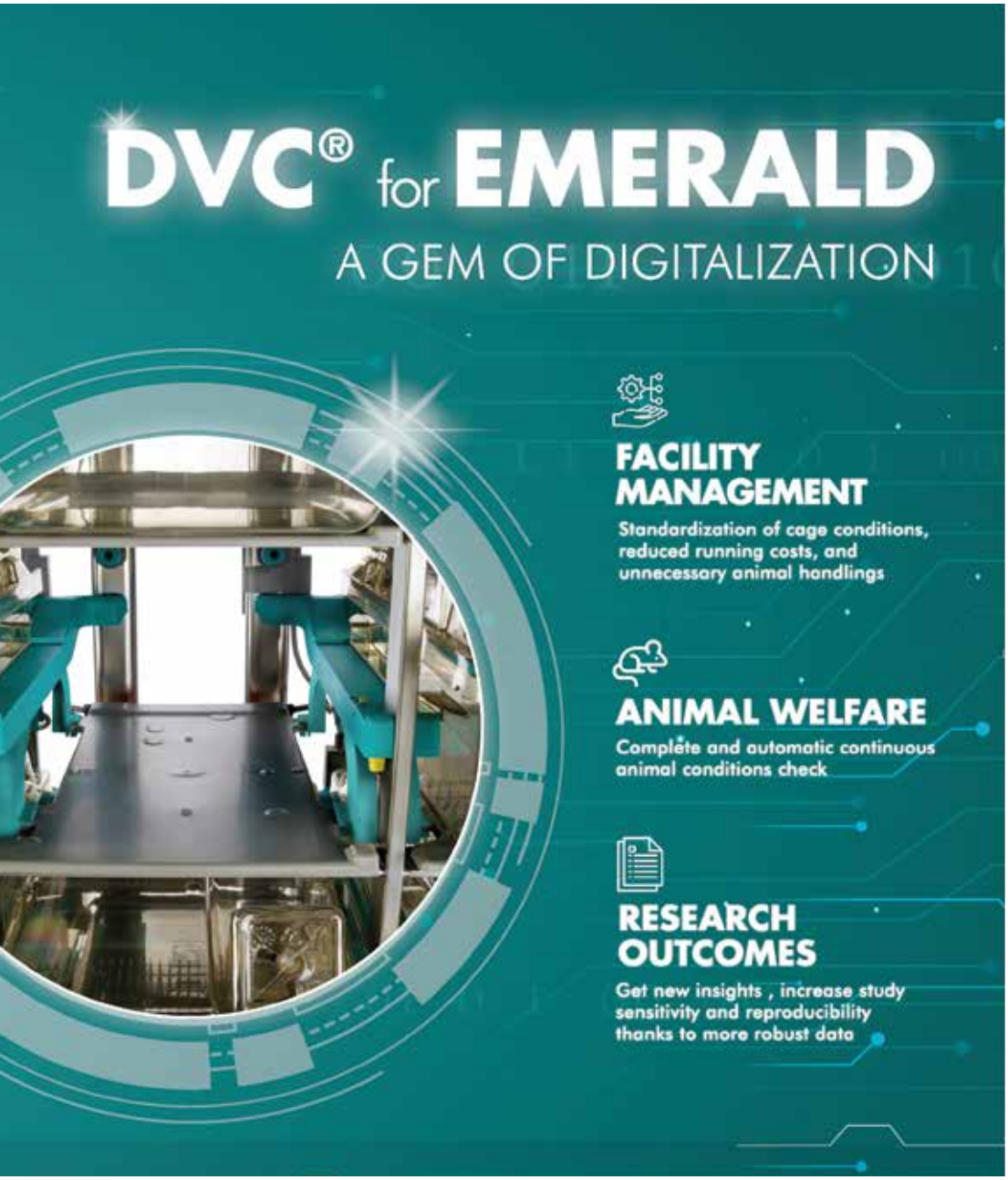








FULL LENGHT LID | HALF FLAT LID | CAGE EXHAUST PREFILTER | CAGE WITH EXTERNAL WATER BOTTLE SUPPORT



DVC™
DIGITAL VENTILATED CAGE

CAPTURE YOUR DATA
UNLOCK NEW POSSIBILITIES

THE NEW DVC® FOR EMERALD
IS NOW AVAILABLE.

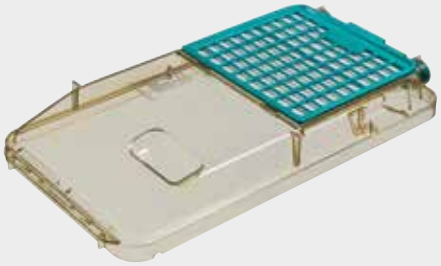
SCAN THE QR CODE AND
ENJOY THE PRODUCT VIDEO

TAKE A LOOK AT WWW.DIGITALCAGE-TECNIPLAST.COM TO FIND OUT MORE!

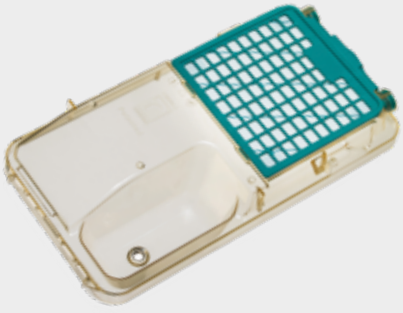
OPTIONS AND ACCESSORIES



CAGE FOR AWS



FLAT TOP



TOP FOR EXTERNAL POUCH

ER1050

LARGER FLOOR AREA

A COMFORTABLE RAT SUITE FOR RESEARCH

ER1050 is an experimental cage conceived to improve research outcomes. Its design is the result of the experience of users from all over the world and combines animal welfare with the requirements of scientific research, improving processability and product handling.

- While keeping a compact design, **the increased floor area (1050 cm2 / 163 in2)** allows you to host one extra animal of the most common size, thus improving the statistical power of your studies.
- Additionally, the ER1050 allows you to set up an enriched and complex environment for the expression of animals' natural habits, whilst **promoting positive behavioral traits** - also during experiments.



INCREASED CAGE DENSITY

Scientific research requires flexibility when it comes to design in vivo studies. With its unique feature of 8 rows in less than a height of 2 metres, the **HD Rack** overcomes space limitations and is the perfect solution to **increase cage density** while saving space in vivarium's.

HD Racks provide an unparalleled density for a rat IVC of this size: the number of cages that can be fitted in an Emerat 1050 rack ensures that extra cage space is readily available when needed.



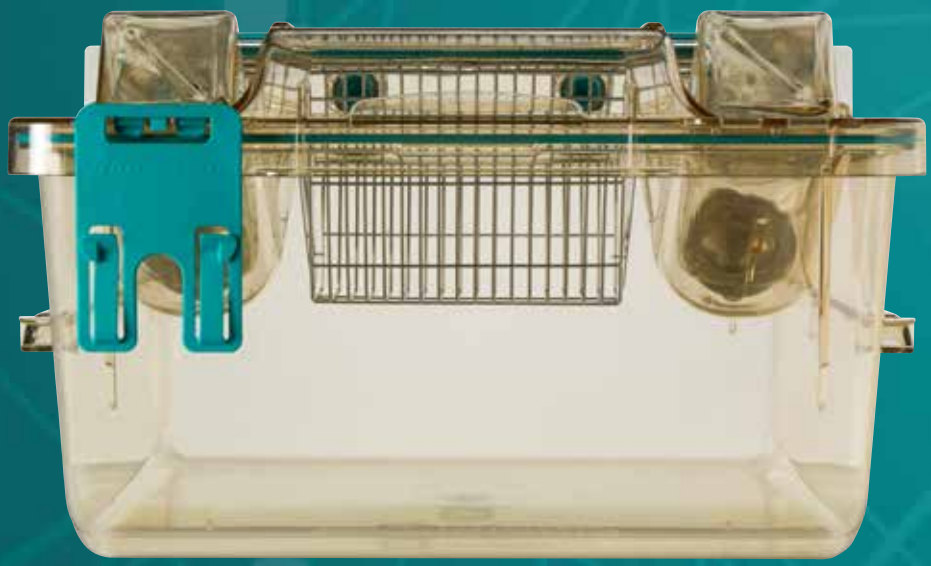
GREATER USER EXPERIENCE

SMARTOP

The PATENTED SmartTop provides the best ergonomic solution for operators, simplifying access to animals while ensuring best aseptic practices.

SmarTop means ergonomics and safety: it facilitates cage change, and its design minimises the risk of cage contamination, reducing the space occupied under the changing station. This is key when working with rat IVCs to ease and streamline the researchers' and technicians' work.

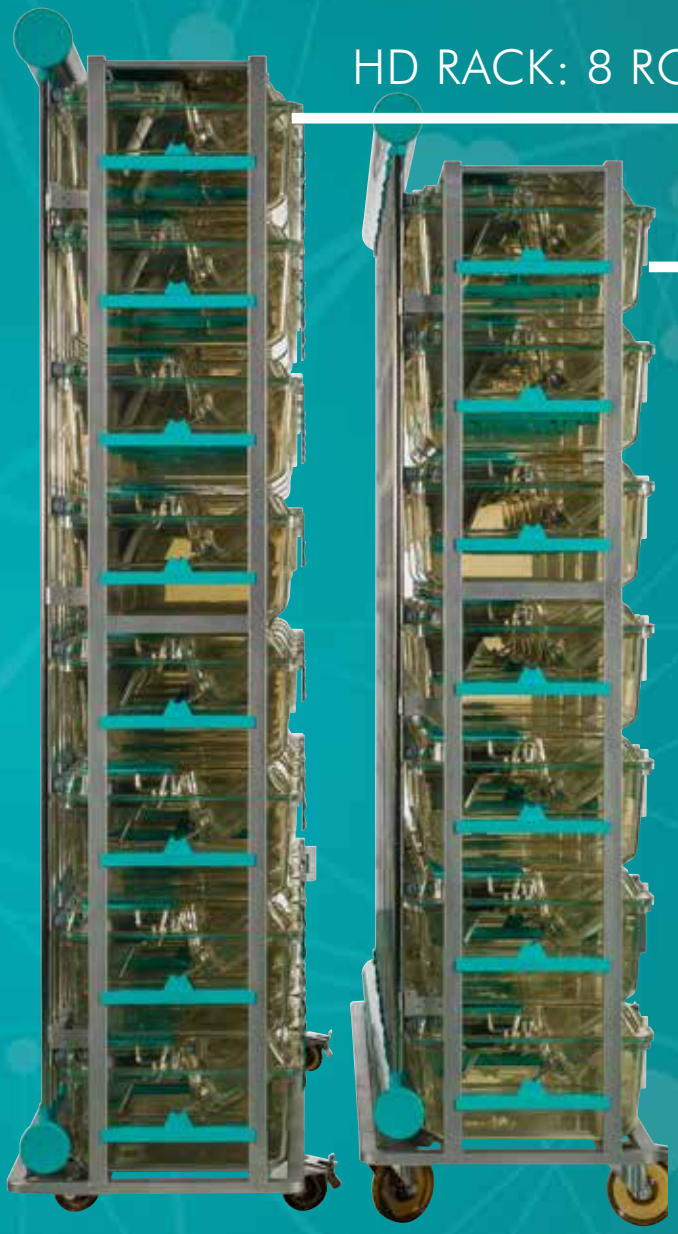




VISION +

The innovative design provides operators with clear and unrestricted visibility inside the cage, thereby reducing handling of cages and animals during daily checks. This is achieved thanks to the Tecniplast PATENTED cage sealing design, combined with the locking system inside the cage. Simply place the top on the cage to achieve perfect sealing.

ALL–IN–ONE–RACK



HD RACK: 8 ROWS

ERGO RACK: 7 ROWS

By lowering the top row to an accessible position and raising the bottom row to a convenient height, the 7 levels **ERGO Rack** allows operators to **easily access all cages in any position** and with maximum comfort.

OPTIONS AND ACCESSORIES



CAGE FOR AWS



FLAT TOP



TOP FOR EXTERNAL POUCH



CAGE DIVIDER

ER1800

EMERAT IVC

THE NEW EMERALD **ER1800 FOR RATS**

OPERATOR COMFORT

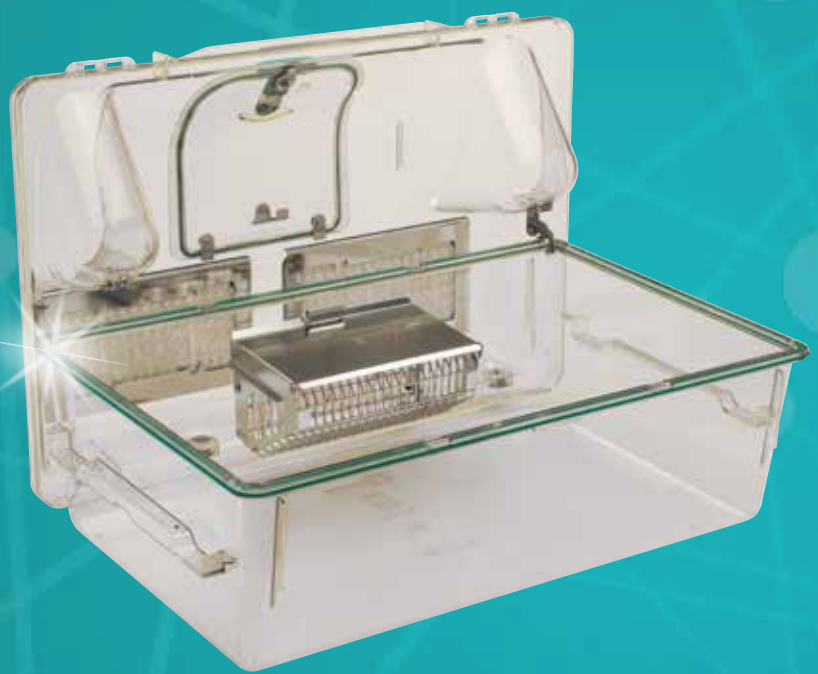
SMARTOP –ONE WORD THREE BENEFITS

- EMERAT's SmarTop provides the best **ergonomic** solution for operators, simplifying access to animals.
- Lift the SmarTop and place it on the base: a simple motion allowing operators to perform easy, reproducible and **standardised procedures** during the cage change.
- The SmarTop assists with **best aseptic practice,** with any potential cross-contamination minimised.

THE LIGHTEST IVC RAT CAGE OF THIS SIZE

Forget the old, bulky rat cages that are difficult to work with: EMERAT is designed to combine comfort and ergonomics to aid operators during their daily welfare tasks.

- The new cage design features **moulded cage runners with built–in handles,** allowing greater ergonomics when transferring the cage on and off the rack. The positioning of the hopper means the cover of the lid can act as a guide to direct the diet in to the hopper providing a simplistic refill, even when the cage is docked on the rack.



ANIMAL WELFARE



A RAT SUITE

Designed by end users across the globe with extensive knowledge of, and experience working with rats, the EMERAT allows the cage occupants to express natural behaviour patterns whilst promoting **positive behavioral traits,** such as bi-pedal posture.

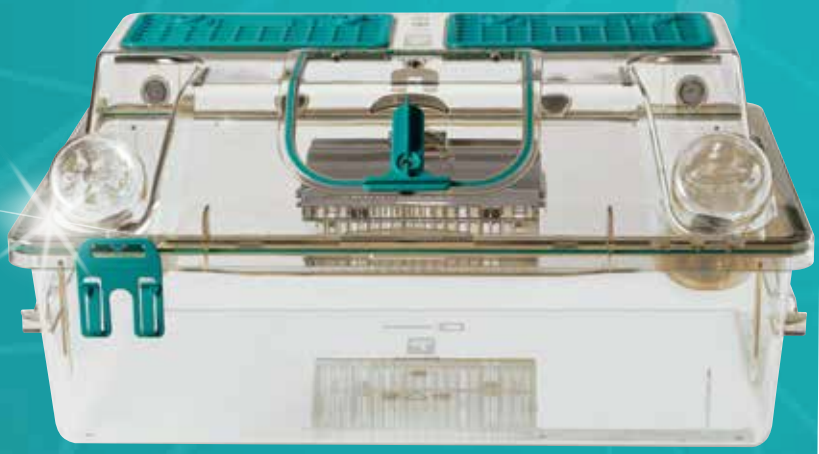


- The internal cage volume is fully accessible to animals, this is due to the absence of a stainless steel lid which can be a hindrance.
- Additionally, thanks to the dual use of the feeder, the solid lid works as a mezzanine where animals can explore, providing an **enriched and complex environment** for the expression of their natural behaviour.

VISIBILITY

VISION+

- The latch-free innovative design guarantees unrivalled visibility, providing a **clear, unrestricted view** allowing daily health and welfare checks to be carried out easily.
- This is achieved thanks to the Tecniplast PATENTED cage sealing design combined with the in-bedded locking system. Simply place the top on the cage to achive perfect sealing.



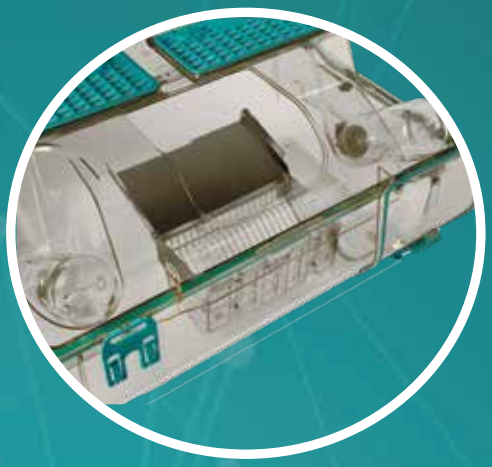
ER1800

VERSATILITY

NEW RACK FEATURES

- The new rack runner now includes the Self-Locking Cage, which allows the operator to remove the cage 'on the rack' where it remains securely locked in position. This feature allows direct access to the cage occupants.

CHOICE IN THE POSITIONING OF THE FEEDER



- The feeder can be positioned either in the rear part of the cage base or the front, depending on operator preference.

ALL IN ONE RACK: ERGO AND HD

Two great IVC rack styles to meet every facilities requirements.

Whether it's positioned at the top or at the bottom, the **ERGO Rack** allows operators to easily access all cages in any position comfortably.

If space is a premium, the **HD rack** optimises space limitations and is the perfect solution to increase the cage density and save space in vivariums.



* **PATENTS**: 2006201744 - 2,545,918 - ZL200610076641.0 - 5068962 - 8,037,847- 1719406 - 102015000011787 - 102015000011767 - 3282831- 311330 - 2016249850 - 18183167.8
PATENTS PENDING: 102017000078916 - 2018205202 - BR102018014324-7 - 3,011,039 - 201810770879.6 - 2018-132132 - 201844026024 - 16/032,987 - 2,982,711 - 15/566,433 - 19122379.1 - 10-2018-0081460 - 107124235 - 201911030040.X - 19205327.0 - 102018000009835 - 10-2019-01333509 - 16/663,979 - 19173555.4 - 102018000009830 - 16/663,961 - PCT/EP2019/079204
UTILITY MODELS: 1856473 - 202018104013 - 1856485 - 202018104015 - ZL201620306702.7 - 202016002256 - ZL201821112325.9 - ZL201821113775.X - ZL201821112342.2 - 202019105857.9 - 202018000003647 - 202018000003648 - ZL201921805229.7 - ZL202327456702.7



TOP FOR EXTERNAL POUCH



TOP WITH HATCH



TOP WITHOUT HATCH

FLOOR AREA:
1.805 CM²/279.78 IN²



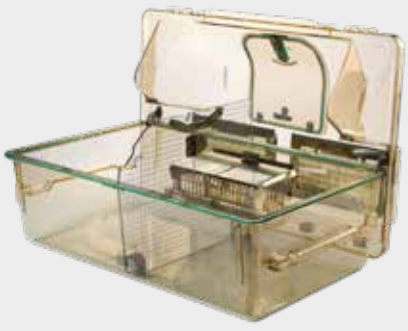
ERGO RACK - 5 LEVELS

Cage	Rack configuration	
ER1800	ER1810X	10 cages (2w x 5h), single sided
	ER1815X	15 cages (3w x 5h), single sided
	ER1820X	20 cages (2w x 5h), double sided
	ER1830X	30 cages (3w x 5h), double sided

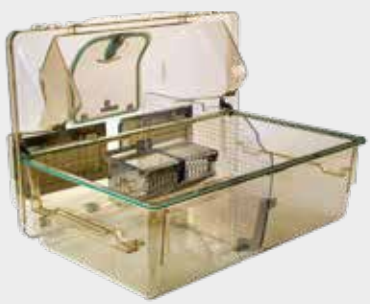
HD RACK - 6 LEVELS

Cage	Rack configuration	
ER1800	ER1812X	12 cages (2w x 6h), single sided
	ER1818X	18 cages (3w x 6h), single sided
	ER1824X	24 cages (2w x 6h), double sided
	ER1836X	36 cages (3w x 6h), double sided





DIVIDER FOR STANDARD FEEDER



DIVIDER FOR STANDARD FEEDER



ER1800 HOOK AND LOOPS



GREEN LINE



FOR MICE

GM500

SEALSAFE® PLUS



FOR RATS

GR900

SEALSAFE® PLUS



FOR RATS

GR1800 DOUBLE DECKER

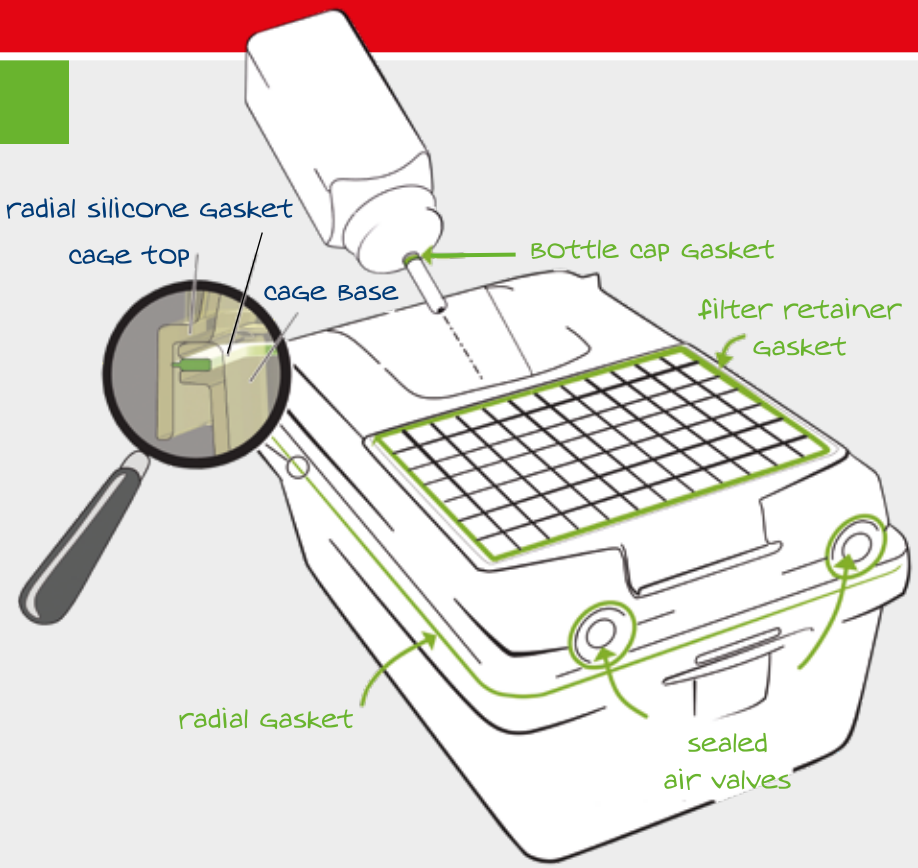
SEALSAFE® PLUS

THE SEALSAFE PLUS, ALSO KNOWN AS THE GREEN LINE, IS THE WORLDWIDE RECOGNIZED IVC STANDARD. IT PROVIDES OPTIMAL PERFORMANCE IN TERMS OF PROTECTION, ERGONOMICS AND DENSITY.

SEALSAFE® PLUS

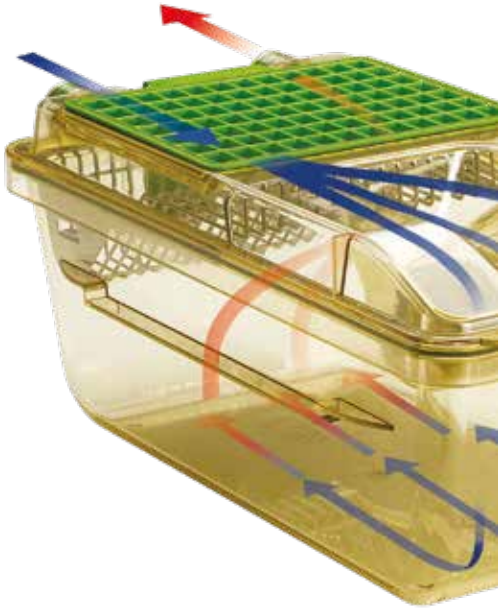
Sealsafe® Plus cage sealing design is patented: enjoy Tecniplast solutions unique benefits!





The Sealsafe® PLUS range of IVC products features a PATENTED cage design, consisting of a soft silicone gasket that protrudes radially all around the cage base rim. The perfect sealing is simply achieved by placing the top on the cage body, through the radial interference between gasket and cage top. Consequently, the vertical compression (commonly provided by the use of latches) of the silicone gasket between cage base and top is not required:

- no latches for the best ergonomics
- no need for latches to achieve excellent containment and high protection



PROTECTION FOR OPERATORS AND ANIMALS

- PATENTED cage sealing design: optimal seal and protection without need for latches
- Multiple sealed cage: silicon gasketed valves (not invasive to the cage), bottle cap, cage base and filter retainer ensure maximum sealing
- Large Microbiological filter (VFE* ≥ 99.999987%, BFE* ≥ 99.9999937%) at cage level, ensures optimal gas exchange as well as an ideal protection also during procedures or in case of power failure
- DOP tested Air Handling Unit's HEPA Filters provide high protection against bacteria, viruses and allergens

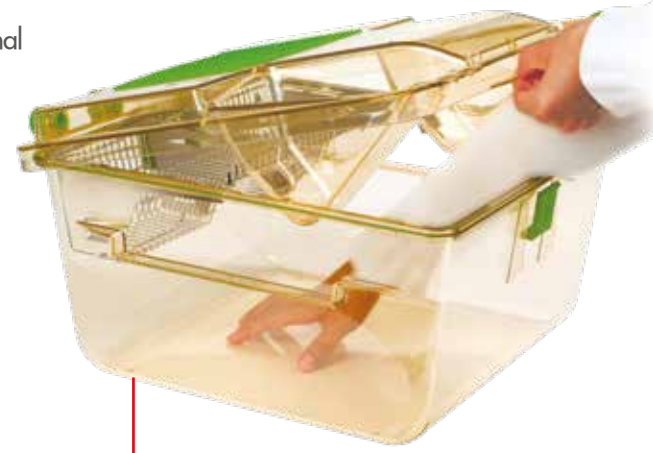
...every time two cage parts meet there is a seal that provides containment





ANIMAL WELFARE

- Air inlet and outlet valves in the top: no air draft at animal level, avoiding risk of stress and heat loss, as reported in the scientific literature
- Stand-alone Air Handling Unit: Easy, Smart, Sky and Wi Flow provide safe ventilation without transmitting vibrations to the rack, ensuring standardization of the experiment. The system is independently certified by TÜV



HALF LENGTH LID

ERGONOMICS

- No latches for a faster cage change, while protection is always ensured by the patented cage sealing; ideal for Automation
- Half length wire bar lid: easy access for a quicker cage change, minimizing the risk of musculoskeletal disorders as well as reducing the cage weight
- Great visibility-focused design and Automatic Visual Docking Indicator with Cage Self-Locking System to help operators perform a quicker daily check
- External self-centering water bottle: quicker bottle change without removing the cage from the rack

LOW RUNNING COSTS

- Stand-alone air handling unit can manage up to 4 single sided racks (or 2 double-sided): energy saving with lower maintenance costs
- ECM DC-Blowers mean low power consumption and less maintenance
- Quick daily check, easy access to the cage and quicker bottle change mean low labour costs

GM500

DGM rack and GM500 cage have been designed in order to provide maximum visibility, improving the ease, the speed and the quality of daily room checks.



Digital Ready IVC!

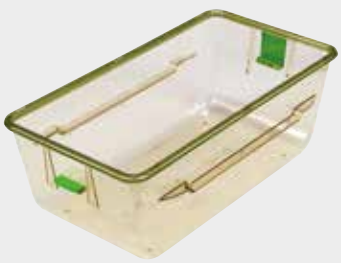
FLOOR AREA:
501 CM²/
77.66 IN²

Cage	Rack configuration	
GM500	DGM54	54 cages (6w x 9h), single sided
	DGM60	60 cages (6w x 10h), single sided
	DGM63	63 cages (7w x 9h), single sided
	DGM70	70 cages (7w x 10h), single sided
	DGM72	72 cages (8w x 9h), single sided
	DGM80	80 cages (8w x 10h), single sided
	DGM108	108 cages (6w x 9h), double sided
	DGM120	120 cages (6w x 10h), double sided
	DGM126	126 cages (7w x 9h), double sided
	DGM140	140 cages (7w x 10h), double sided
	DGM144	144 cages (8w x 9h), double sided
	DGM160	160 cages (8w x 10h), double sided

OPTIONS AND



CAGE FOR AWS



UNI-HAND CAGE BODY

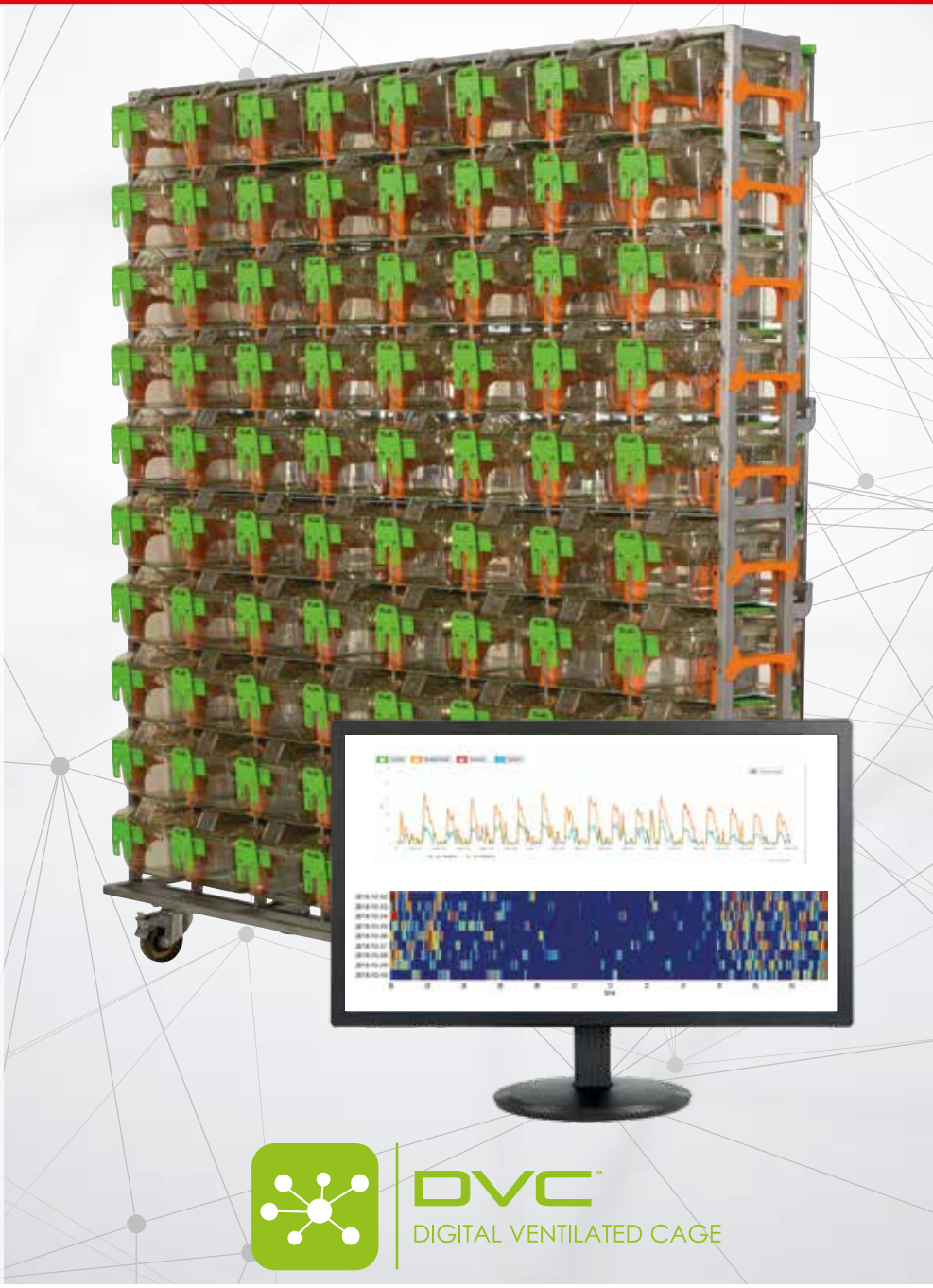


GM500 PLUS

DIGITAL READY

THE DGM RACK IS FULLY COMPATIBLE WITH STATE-OF-THE-ART REVOLUTIONARY TECHNOLOGIES.

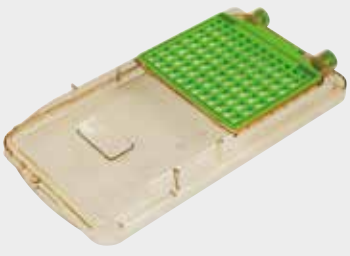
- DVC® system uses a non-disruptive capacitive-based sensor board externally located under the standard individually ventilated home cage to collect data on spontaneous animal activity within the cage every 250 milliseconds, 24/7. The sensor board was made up of 12 capacitive-based planar sensing electrodes that measured changes in capacitance as animals moved across the cages and generate different activity metrics for overall cage activity.
  Thanks to its effortless plug&play essence, you can easily obtain unlimited observation time simply housing animals in their standard IVC cage and automatically recording data from the most natural environment, their home-cage.



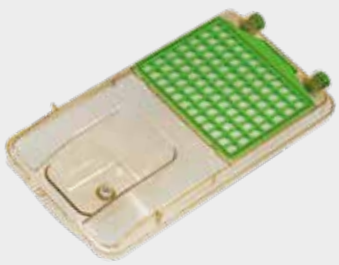
DVC™
DIGITAL VENTILATED CAGE

TAKE A LOOK AT TECNIPLAST **DIGILAB** BROCHURE TO FIND OUT MORE!

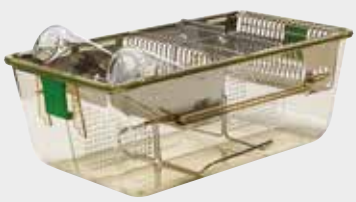
ACCESSORIES



FLAT TOP



TOP FOR WATER POUCHES



CAGE DIVIDER

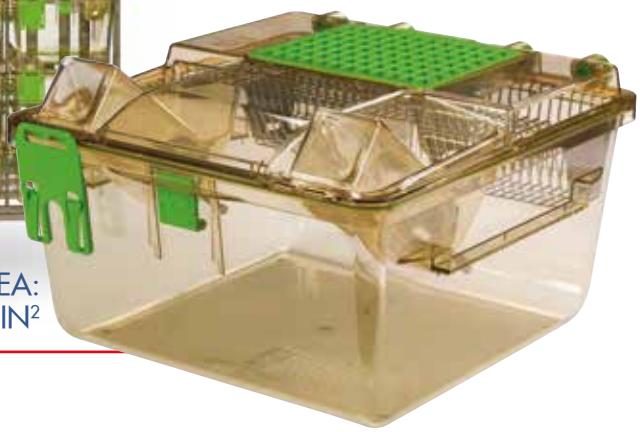


FULL LENGTH LID

GR900



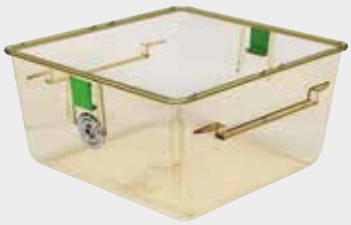
- Seven-row rack under 2 meters high in a small footprint for maximized density: optimized floor area usage with consequent reduction of the facility running costs.



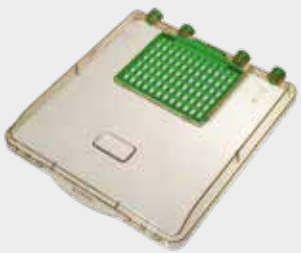
FLOOR AREA:
904 CM²/140.12 IN²

Cage	Rack configuration	
GR900	DGR28	28 cages (4w x 7h), single sided
	DGR35	35 cages (5w x 7h), single sided
	DGR56	56 cages (4w x 7h), double sided
	DGR70	70 cages (5w x 7h), double sided

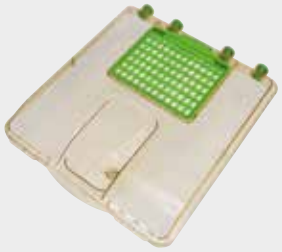
OPTIONS AND ACCESSORIES



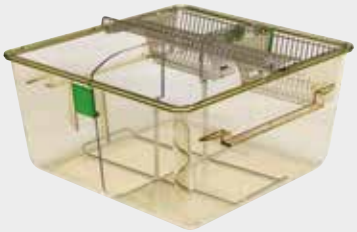
CAGE FOR AWS



FLAT TOP



TOP FOR WATER POUCHES



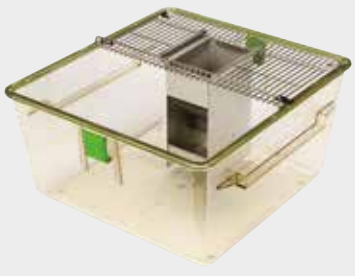
CAGE DIVIDER



LID FOR MICE



LID FOR MICE WITH MOUSE LOFT



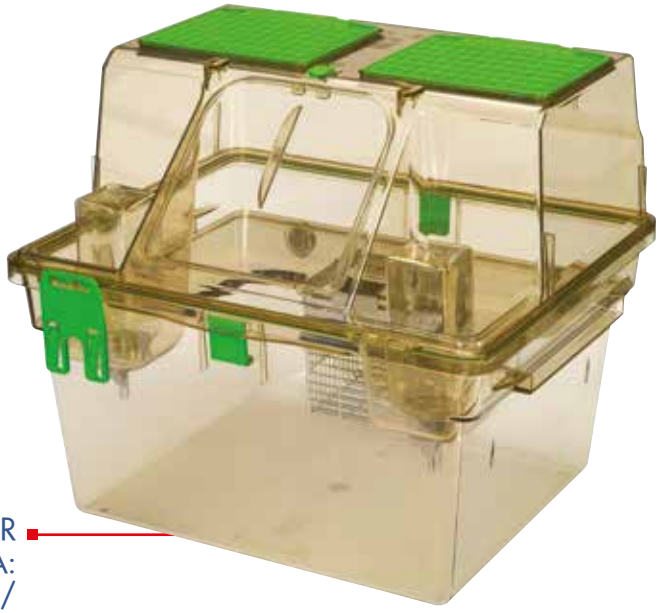
GUINEA PIGS CONFIGURATION

GR1800 (DOUBLE DECKER)

...life is better on two floors!

Double Decker is the only rat cage featuring a two-level, enriched environment, with an internal height of 38 cm: thanks to this three-dimensional space, animals exhibit more positive behaviour like climbing, jumping and standing in bi-pedal posture. Increased positive behaviour means more reliable research outcomes.

- Over1800 cm^2 floor area designed to ensure perfect visibility on both floors and reduce the cage footprint for easy handling

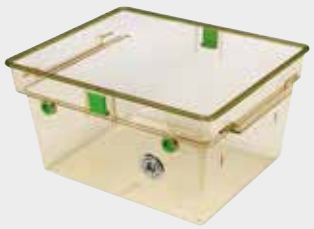


FLOOR AREA: 1862 CM^2/ 288.61 IN^2



Cage	Rack configuration	
GR1800	DGR12DD	12 cages (3w x 4h), single sided
	DGR16DD	16 cages (4w x 4h), single sided
	DGR24DD	24 cages (3w x 4h), double sided
	DGR32DD	32 cages (4w x 4h), double sided

OPTIONS AND ACCESSORIES



CAGE FOR AWS



TOP WITHOUT HATCH



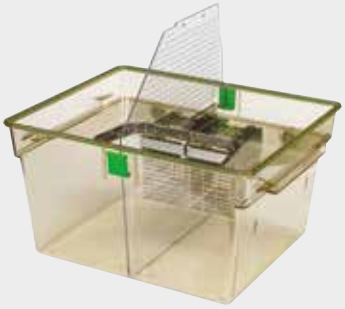
TOP FOR WATER POUCHES



RED SKY DECK



ENLARGED CAPACITY FOOD HOPPER



CAGE DIVIDER



TOP FOR STATIC APPLICATION



LET US HELP YOU TO DESIGN YOUR FACILITY: THE RIGHT EQUIPMENT IS JUST THE BASIC STEP TO ACHIEVE AN ACCURATE PLANNING OF SPACES, RESOURCES AND WORKFLOWS AND, ULTIMATELY, MEET YOUR EXPECTATIONS.

You are at the heart of what we do

Our PROJECT MANAGEMENT SUPPORT is an integral part of the service that we offer to clients. From requirements review to design stage to implementation, the project management team is available to handle all project aspects on behalf of the customer. A project leader will be assigned to work directly with the customer's staff, consultants and designers to ensure a single point of communication and responsibility for the project.

All drawings, layout and technical information will be coordinated by our project management staff and they will be available for meetings via teleconference or videoconference and for site meetings, as required.
Whether we are dealing with small individual projects or multiyear programs, the project manager's top priority is to deliver products which exceed the client's expectations.

Scan the QR CODE with your smartphone and enjoy the 3D experience!

TECNIPLAST IS NOT JUST A PROVIDER OF LAB ANIMAL EQUIPMENT AND RELATED SERVICES BUT IS THE IDEAL PARTNER FOR YOUR VIVARIUM PROJECT.

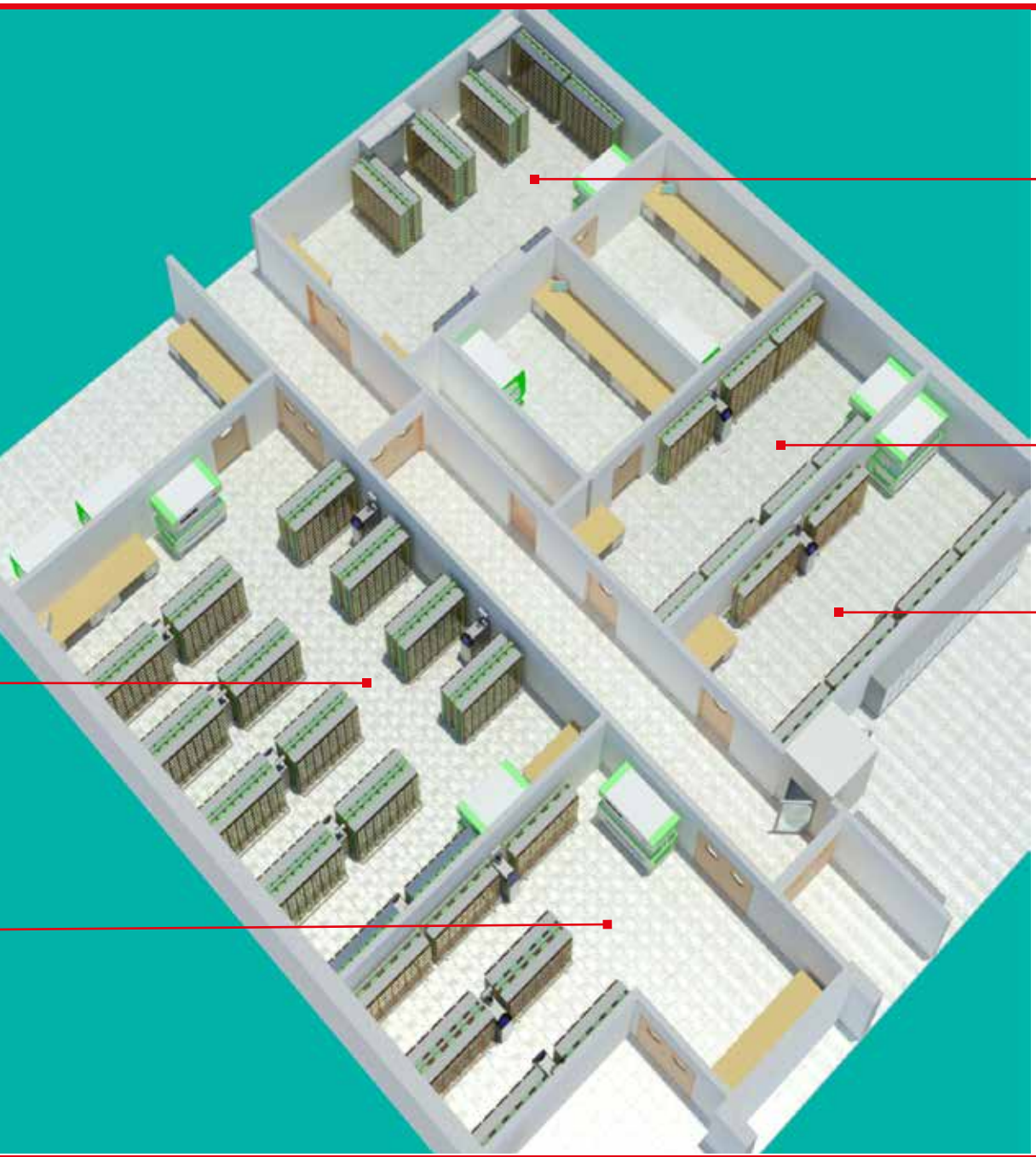
SCAN THE QR CODE WITH YOUR SMARTPHONE AND ENJOY THE 3D EXPERIENCE!

The importance of maintenance

AN APPROPRIATE PREVENTIVE MAINTENANCE PROGRAM IS CRITICAL TO GUARANTEEING BOTH THE OPERATOR AND ANIMAL PROTECTION OVER TIME, ASSURING THE FUNCTIONALITY OF THE EQUIPMENT IN ACCORDANCE WITH THE MANUFACTURER SPECIFICATIONS.

Once the equipment is installed and running, at Tecniplast we take very seriously the continuous professional support and problem-solving through our POST-SALES SERVICE PROGRAM. It goes hand in hand with the qualification of our Service Engineers: only those who attend regular training courses at the headquarter and pass complex exams achieve the Competence Certificate that qualifies them to work on our equipment.

The Competence Certificate identifies the Engineers with picture and personal data, clearly stating what tasks they are qualified to perform on which machines. We know that your long term satisfaction can only be assured by professional and competent Engineers who know well both the equipment and your needs.




WiFlow
GUARDIAN

AIR HANDLING UNITS



WI FLOW



SMART FLOW



EASY FLOW



CLIMA FLOW



SKY FLOW

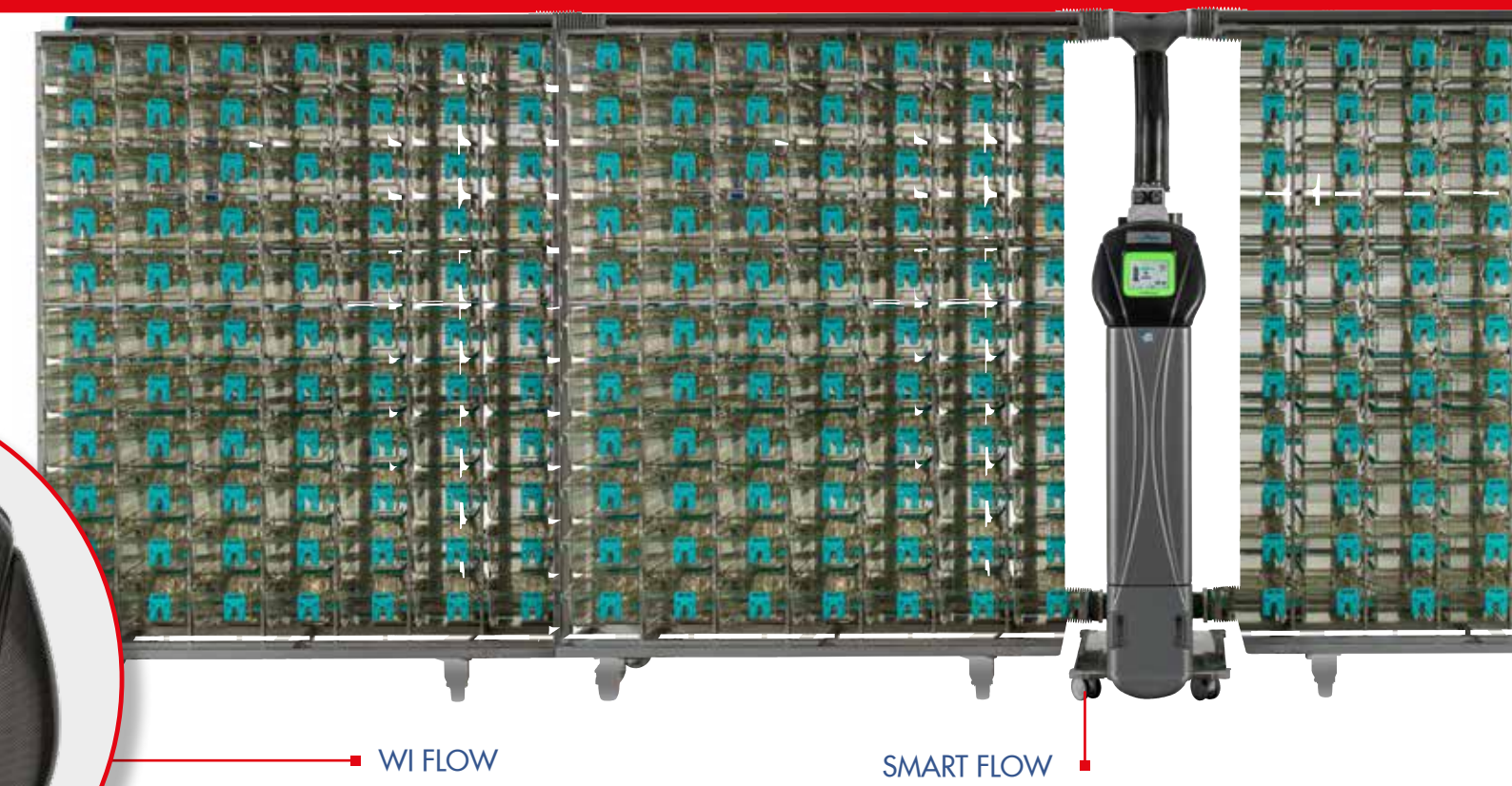
AS THE HEART OF AN IVC SYSTEM, THE PRIMARY OBJECTIVE OF ANY AIR HANDLING UNIT IS TO PROVIDE AND MAINTAIN A STABLE ENVIRONMENT FOR THE CAGE INMATES. SAFETY AND TOTAL CONTROL AT YOUR FINGERTIPS, WHEREVER AND WHENEVER IS OUR LEITMOTIV. FROM SMALL TO HUGE FACILITIES, TECNIPLAST IS READY TO SOLVE ANY NEED THROUGH THE MOST COMPLETE RANGE OF AIR HANDLING UNIT SOLUTIONS.



WI FLOW, SMART FLOW, EASY FLOW, CLIMA FLOW AND SKY FLOW ARE THE LATEST GENERATION OF AIR HANDLING UNITS. MICROPROCESSOR DRIVEN (AUTOMATIC CONSTANT FLOW RATE AND FILTER LOAD COMPENSATION), THEY GUARANTEE SAFETY FOR ANIMALS, OPERATORS AND THE ENVIRONMENT.

- WI FLOW, THE NEW AHU DESIGNED TO BE CONTROLLED BY PORTABLE DEVICES, IS EQUIPPED WITH A STATE OF THE ART TOUCH PANEL
- SMART FLOW FEATURES A NEW GENERATION OF TOUCH SCREEN CONTROL PANELS OFFERING ADVANCED SETTING FEATURES AND ENHANCED FLEXIBILITY
- EASY FLOW IS OPTIMAL IN TERMS OF SIMPLICITY OF USE
- CLIMA FLOW IS THE TECNIPLAST IVC AIR HANDLING UNIT WITH HUMIDITY CONTROL.
- SKY FLOW CAN BE EITHER WALL MOUNTED, CEILING MOUNTED AND INTEGRATED INTO THE MEZZANINE

PMD
PERFORMANCE MONITORING DEVICE



SAFE VENTILATION

- Stand-alone Air Handling Unit: Wi Flow, Smart Flow, Easy Flow and Sky Flow provide safe ventilation without transmitting vibrations to the rack, ensuring standardization of the experiment and stress-free animals
- Performance Monitoring Device (PMD) constantly controls blower and filters load status: monitored performances with an intuitive interface
- Every single air handling unit undergoes several tests including the DOP test proving the system filtration efficiency: validated safety for both operators and animals

LOW RUNNING COSTS

- Multilinking feature allows up to 4 single sided-racks (or 2 double-sided) to be served: reduction of maintenance and consumables costs
- New DC Electronically Commuted Motor (ECM): 50% less power consumption and 90% less heat loss than the previous generation of AHUs, guaranteeing longer lifespan

ERGONOMICS

- Control panel at eye level and easy pre-filter access: user-friendly system
- Light and easy to move

FUTURISTIC REMOTE CONTROL AND SAFE TECHNOLOGY

All the Air Handling Units are compatible with state-of-the-art technologies for remote monitoring and control:

- **ONE 2 ONE**: allows each and every AHU to be controlled via any portable device through a modern interface. One control device for all AHUs
- **GUARDIAN**: the system allows all the AHUs in the facility to be remotely monitored and controlled, forwarding notifications in case of alarm and recording all parameters' trends. Global view and remote control of all AHUs

WI FLOW



Connectivity at your fingertips: wherever and whenever!

- Integrated **ONE 2 ONE**:
  - Complete control of all settings and parameters via portable device (any tablet, smartphone or laptop). One control device for unlimited AHUs
  - Full access to the advanced features of the AHU, including power-saving mode and night mode: reduced running costs and undisturbed environment for the animals
- Pre-arranged for **GUARDIAN** (optional): the state-of-the art system that allows to remotely control all units, receive notifications of alarms and record all the parameters' trends
- PMD (Performance Monitoring Device) allows for blower and HEPA filter status monitoring with a user-friendly indicator: safe and monitored ventilation



ONE 2 ONE





GUARDIAN



SMART FLOW



- All functions are accessible through a user-friendly touch screen: ease of use
- Wide variety of functions available and editable: ventilation parameters, alarm thresholds, passwords and many others
- PMD allows for blower and HEPA filter status monitoring with a user-friendly indicator: safe and monitored ventilation
- Compatible with the GATEWAY, that enables the **ONE 2 ONE** control via portable device and the **GUARDIAN** (optional)



USER-FRIENDLY TOUCH SCREEN



GATEWAY ENABLES THE **ONE 2 ONE** AND THE **GUARDIAN**



MULTILINKING FEATURE ALLOWS ONE AHU TO SERVE UP TO 4 SINGLE-SIDED RACKS (OR 2 DOUBLE-SIDED)

EASY FLOW



SOFT TOUCH PANEL



GATEWAY ENABLES THE **ONE 2 ONE** AND THE **GUARDIAN**



- Eye-level control panel allowing basic functions to be operated: simple and intuitive controls
- Compatible with the GATEWAY, that enables the **ONE 2 ONE** control via portable device and the **GUARDIAN** (optional)
- Provides safe ventilation of up to 4 single sided racks (or 2 double sided)

CLIMA FLOW

Standalone unit with humidity control

Clima Flow is the Tecniplast IVC Air Handling Unit with humidity control featuring an accurate regulation and maintenance of the intra-cage air parameters.
Clima Flow guarantees animal welfare through an increased consistency of environmental conditions for cage inhabitants, making for more reliable research outcomes.

FULL CONTROL OF IVCS AIR PARAMETERS

- Clima Flow is purposely designed to guarantee a strict control of the IVC air, including regulating its humidity, with the renowned reliability of the Tecniplast Air Handling Units.

ENERGY SAVER & ENVIRONMENTAL FRIENDLY

- Clima Flow treats the minor volume of air strictly needed by the IVCs. As a consequence, by conditioning a smaller amount of air compared to that needed for the whole room, it reduces the facility running costs through a “green” approach.

FLEXIBLE

- Standalone solution that allows an easier refurbishment/ enlargement of existing facility, especially where modification or expansion of the existing HVAC is not possible or prohibitive in terms of costs or building capability.





SKY FLOW



Sky Flow can be either: wall mounted, ceiling mounted and integrated into the mezzanine.
Sky Flow is available in two different configurations: with wired Touch Screen and wireless. The supply and exhaust modules can be separated allowing a maximum flexibility of the layout.

LOW RUNNING COSTS

- Multilinking feature allows up to four single sided racks (or two double sided) to be served: reduction of maintenance and consumables costs
- New DC Electronically Commuted Motor (ECM): 50% less power consumption and 90% less heat loss than the previous generation of AHUs, guaranteeing longer lifespan

SAFE AND STANDARDIZED VENTILATION

- HEPA filters are DOP tested on every single unit, assuring a high level of safety for operators and animals
- Stand-alone air handling unit: Sky Flow provides safe ventilation without transmitting any vibration to the rack, ensuring standardization of the experiment

HIGH MONITORING AND SECURITY

- Performance Monitoring Device (PMD) constantly monitors blower and filters load status: Monitored performaces and intuitive interface
- Compatible with the GATEWAY, that enables the **ONE 2 ONE** control via portable device and the **GUARDIAN** (optional), the remote control of all AHUs in the facility. State-of-the-art technology in the facility

Which type of ventilation best suits your needs?

THE DECISION REGARDING THE TYPE OF VENTILATION TO USE SHOULD BE MADE ONLY AFTER EVALUATING THE RISK/COST BENEFIT OF EACH SOLUTION WITH RESPECT TO REDUNDANCY, FILTRATION, TOTAL CONSTRUCTION COSTS, ERGONOMICS, FLEXIBILITY AND RELIABILITY. TECNIPLAST IS ABLE TO ASSIST THE CUSTOMER IN THE DECISION PROCESS, BASED UPON THE SPECIFIC NEEDS WITH A SPECIFIC PRODUCT FOR EACH SPECIFIC REQUIREMENT.





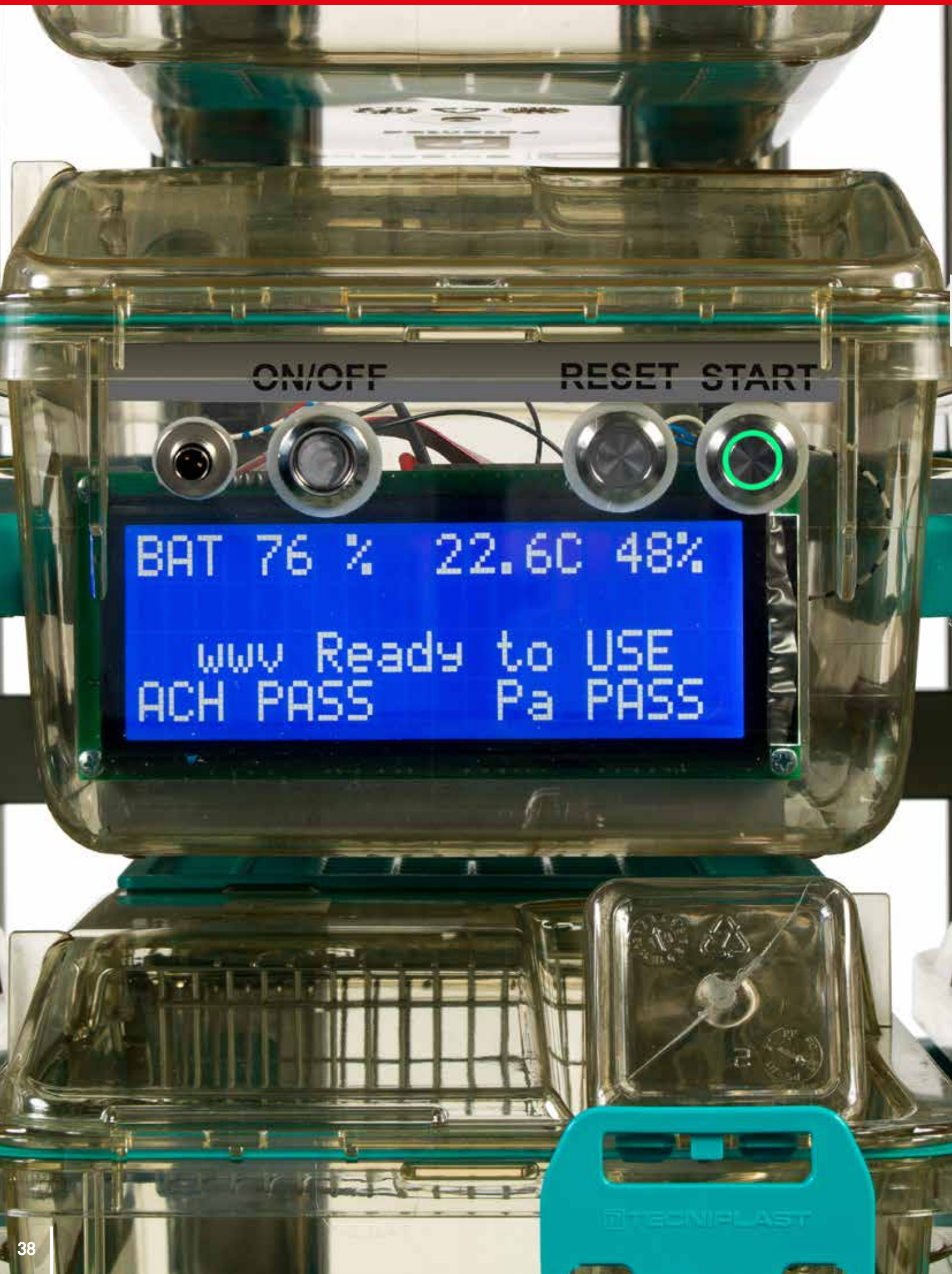
WIRELESS CONTROL
(SKY PAD OR MOBILE DEVICE)
OR WITH WIRED TOUCH SCREEN



HEPA FILTERS DOP TESTED
ON EVERY SINGLE UNIT

Sky Flow's software automatically calculates the HEPA filters lifespan according to the number of cages connected to the AHU.




ON/OFF
RESET START
BAT 76 % 22.6C 48%
www Ready to USE
ACH PASS Pa PASS
TECNIPLAST

DEDICATED SOLUTIONS



IVC MICROBIOLOGICAL MONITORING



AMOUSEMENTS



LIBRARY SYSTEM



TRANSIT LINE



WIRELESS MONITOR CAGE



CAGE LINERS



SINGLE USE

TECNIPLAST, PARTNERING WITH CLIENTS, HAS DEVELOPED OVER THE YEARS THE WIDEST RANGE OF IVC ANCILLARY PRODUCTS AND DEDICATED SOLUTIONS.

IVC MICROBIOLOGICAL MONITORING: INTERCEPTOR



Tecniplast has developed a system that improves the microbiological environmental monitoring of IVCs: Interceptor collects particles moving from cages to the exhaust filtration area, that are thus ready for microbiological screening.

QUICK AND EFFECTIVE DETECTION OF MICROORGANISMS

Interceptor shows higher sensitivity vs the bedding sentinels traditional methodology. Data demonstrate that difficult-to-detect pathogenic microorganisms (FELASA panel, 2014) are more quickly identified, even with a low infection prevalence.

CLOSED SYSTEM TO AVOID CONTAMINATION OF SAMPLES (PATENTED)

Once Interceptor is removed from the AHU, the filter is protected by its cardboard folder from contaminants and it is ready to be sent for PCR testing.

EASIER AND CHEAPER THAN BEDDING SENTINELS

Interceptor is easy and quick to install. It is cheaper than bedding sentinels because it avoids the use of extra animals and the related costs of labor, handling and shipment. A step forward for the 3Rs (Reduction, Refinement, Replacement).

VALIDATED SYSTEM

Interceptor is the result of four years of studies to find a reliable and efficient microbiological screening method.





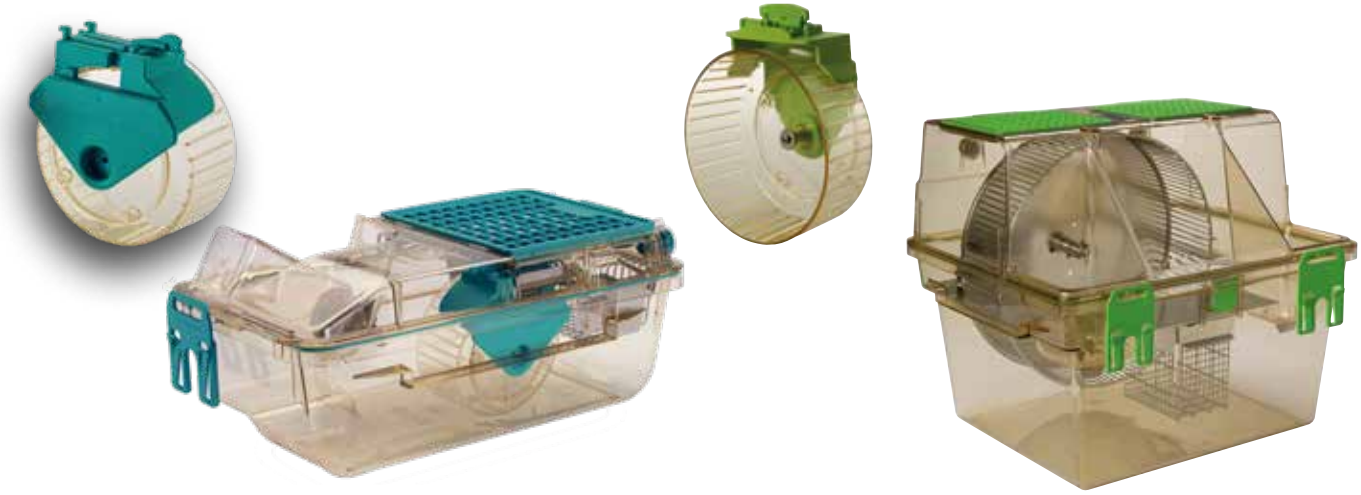


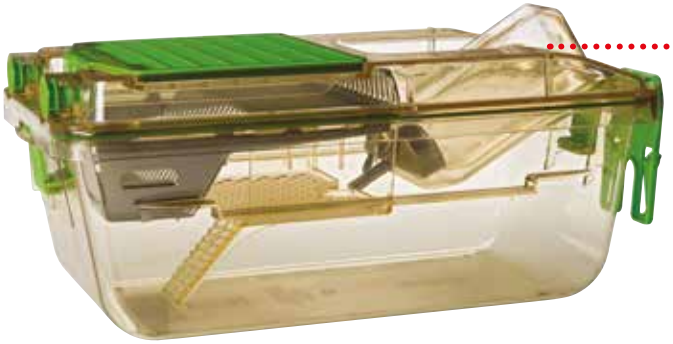
GYM500

The ACTIVITY WHEEL is an environmental enrichment designed to increase animal welfare by promoting voluntary activity of mice in IVCs. At the same time, it is a useful research tool to monitor the physical activity of the animals. Both Emerald and Green Line Activity Wheel are made of polysulphone. The Emerald version is available in two different versions to allow installation on either stainless steel or plastic lid configuration.



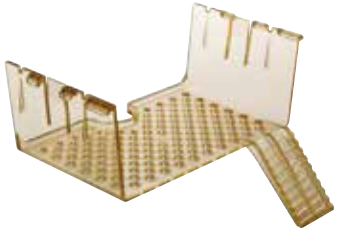
Design and Utility Model granted, details on request. Copyright is licensed exclusively to Tecniplast from Cambridge Enterprise Limited. Cambridge Enterprise Limited is a whally owned subsidiary of the University of Cambridge





MOUSE MEZZANINE

The MOUSE MEZZANINE is attached to the wire bar lid and works as a lounge for the cage inhabitants.
It can be added to all the existing GM500 cages with standard lid. Mouse Mezzanine is available in polysulfone or red polyetherimide to create a more intimate environment.

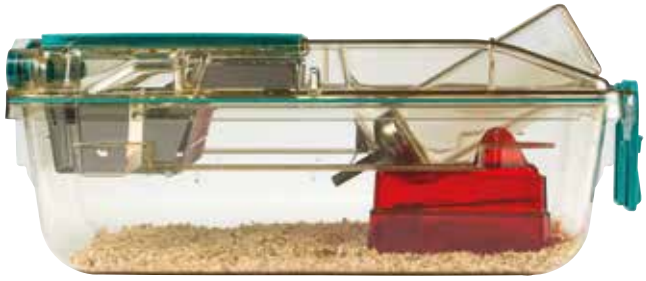


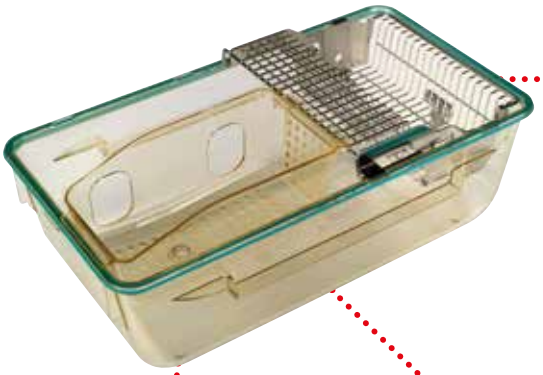




MOUSE HOUSE

The MOUSE HOUSE delivers a sophisticated and immersive three-dimensional environment, within standard laboratory caging. It incorporates multiple entrances, a shelf and a large nesting area. Its design maximises the use of floor area and encourages mice to zone their cage space.

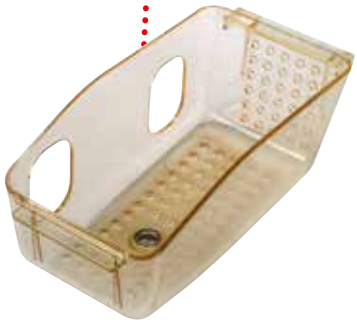




MOUSE LOFT/POUCH LOFT/BALCONY

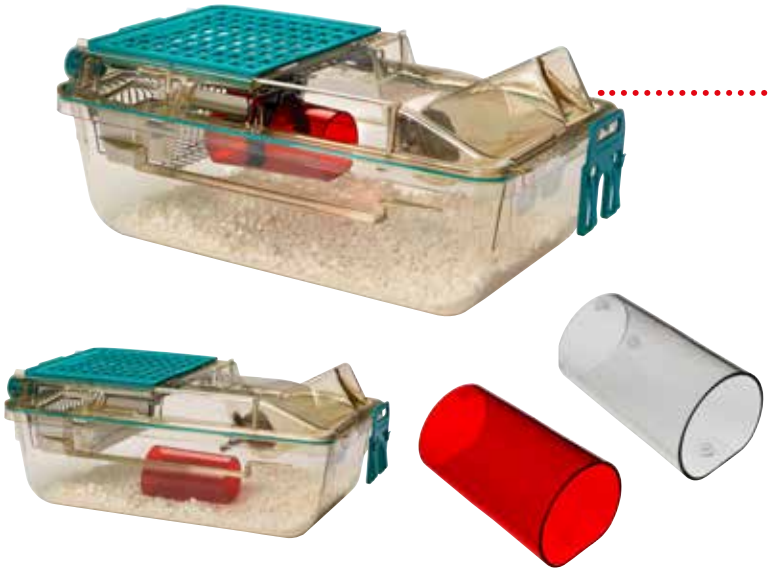
The MOUSE LOFT and the MOUSE BALCONY are hanging environmental enrichments that enhance the complexity of the 3D environment within the cage. The MOUSE POUCH LOFT is a multi-purpose mouse loft designed for cages equipped with the Automatic Watering System. Its 2-in-1 design offers the advantage of being used as an enrichment or a useful solution to securely hold a bag of water. It is easy to fit by placing it between the lid and the top edge of the front wall of the cage.











MOUSE TECNITUNNEL

The MOUSE TECNITUNNEL is an environmental enrichment tool that establishes a dynamic and layered three-dimensional environment. It can be installed suspended or on the cage surface. Its flat side ensures stability and comfort for animals, while preventing rolling, making handling easier for users. The conical shape, designed to resemble the human hand, allows it to double as a mouse scoop, reducing contact and stress during transfers, while being ergonomic for the operators. Also available in red color, it adds diversity to the cage space. The TECNITUNNEL can be suspended in GM500, EM500 cages using specific clips for stainless steel or plastic lids and blue line cages.

MOUSE BOX

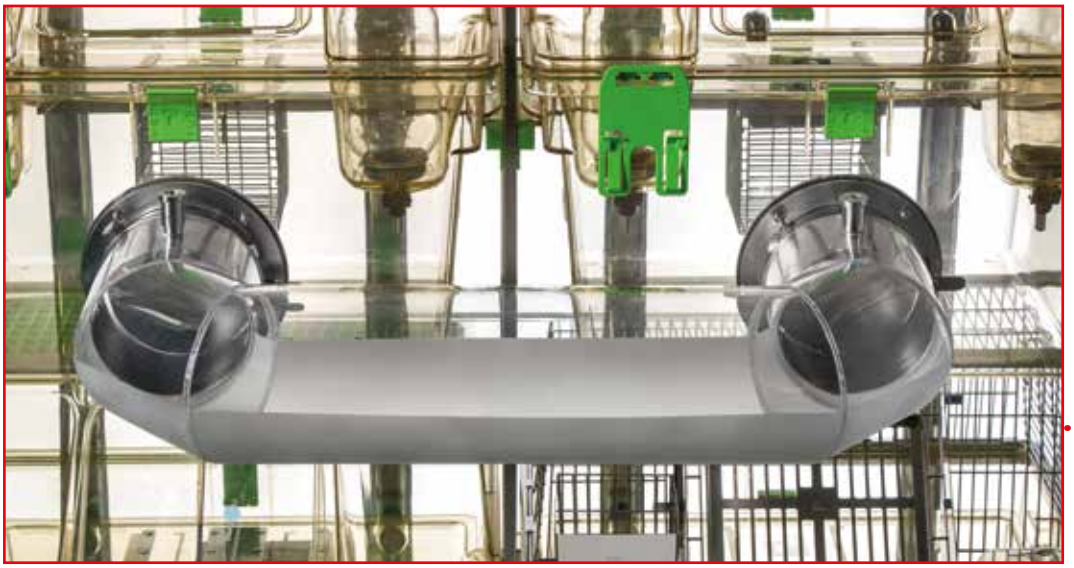
The MOUSE BOX stimulates animal curiosity and can be filled with nesting or other materials, keeping animals engaged as they extract them. It can be installed suspended or on the cage floor, where it also serves as a platform to enhance the cage environment. The Smart Clip adapts to the chosen stainless steel or plastic lid upon first installation for easy setup. Suitable for all EM500 Lids in case of suspended installation or for all Tecniplast cages when positioned on the cage floor.





MOUSE SWING AND MOUSE LOUNGE

The MOUSE SWING and MOUSE LOUNGE are suspended enrichments that create a multi-level 3D cage environment. The MOUSE SWING gently oscillates when animals climb onto its platform, while the MOUSE LOUNGE provides also a stable platform for weaker animals to access food more easily. In cages with autowatering systems, they also serve as safe harbors in case of flooding. Both enrichments are compatible with stainless steel and plastic Emerald lids and can be also used as animals transfer devices.



INTERLINKING

INTERLINKING is the ideal enrichment to promote the animals' natural behaviour by providing an interactive environment that stimulates interaction and ensuring the reliability and reproducibility of scientific results. This cage system consists of a circular tunnel that connect two neighbouring cages on the same rack, through frontal openings on the cages. Interlinking allows the animals to move freely from one cage to another and, thanks to doors at openings level, it is possible to regulate the animal's access to the tube. Interlinking is available for Green and Emerald Line, mouse and rat cages.

Compatibility Table:

Enrichement Type	EM500	GM500	GR900	GR1800DD	1145 NEXT	1285L NEXT	1291H NEXT
Suspended Mouse TecniTunnel	✓	✓	X	X	✓		
Mouse TecniTunnel	✓						
Mouse Clip for Green/Blue Line	X	✓	X	X	✓	✓	✓
Mouse Clip for Emerald Line	✓	X					
Suspended Mouse Box	✓	✓	X				
Mouse Box	✓						
Mouse Swing	✓	X					
Mouse Lounge	✓	X					
Mouse Loft	✓	✓	✓	X			
Mouse Pouch Loft	✓	✓	✓	X			
Mouse Balcony	X	✓	X				
Activity Wheel	✓	✓	X	✓	X		
Mouse Mezzanine	X	✓	X				
Interlinking	✓	✓	✓	✓	X		

LIBRARY SYSTEM: ML+ & MML+

The system follows the bookshelves concept to increase the density: the Library system is available as Mouse Library Plus (ML+) where the racks are moved by the operator and as Motorized Mouse Library Plus (MML+) where a motorized wheel activated by a button moves the racks. Available for Green and Emerald Line.

INCREASED DENSITY

- Library system features reduced distance between racks, since it allows them to be moved thus creating the necessary space for daily check or cage change: up to 30% more density when 100% occupancy is not enough
- Create your space for easy daily check, cage change or mice observation: more density, same ergonomics

ERGONOMICS AND FLEXIBILITY

- The system is easy to install
- Racks can be easily moved to washing area and autoclave with no need for any tool
- ML+ can be upgraded to MML+ with the retrofit motorized wheel kit

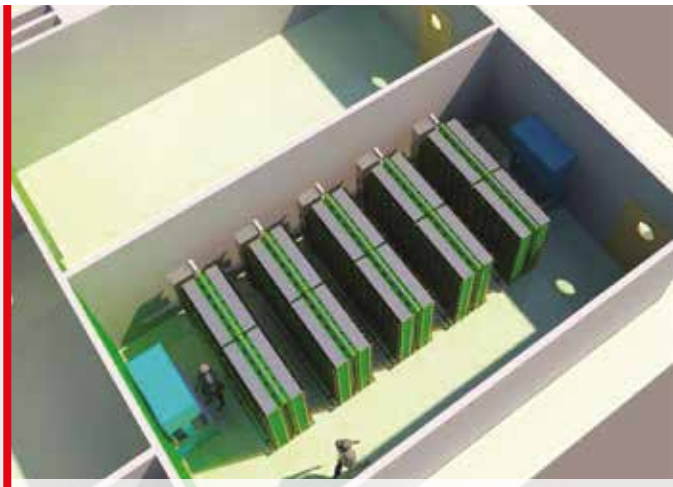
ANIMAL WELFARE

- The library system moves silently: no stress for the animals

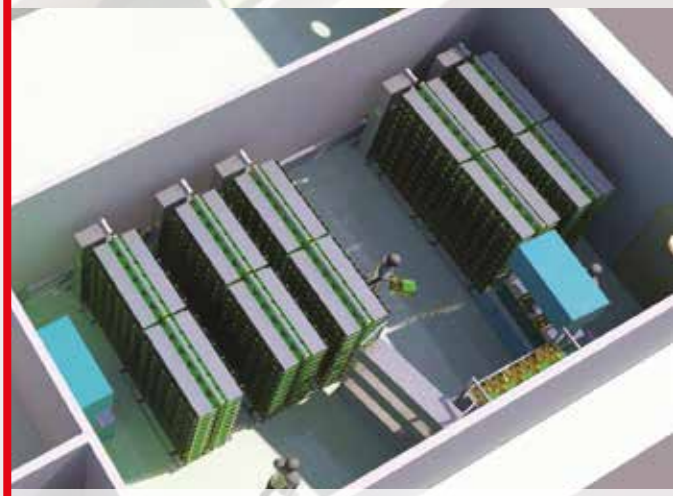
Up to

30% more density!





PARKING POSITION



CAGE CHANGING POSITION



IVC TRANSPORT TROLLEY

IVC Transport Unit has been developed to move cages from the stock/breeding rack to experimental areas, maintaining the same ventilated conditions as the IVC rack. .

The Transport trolley is available with a Lighting Control System, which allows evaluation of the animals' physiological response to circadian rhythm variation.

ANIMAL WELFARE

- The Transport Trolley ensures every cage receives a controlled ventilation when they are moved between their stock/breeding rack to an experimental area or whilst groups are moved between barriered units.

ERGONOMY

- Compact and easy to move, the mini-rack is at a optimum height without obstructing the view of the operator while moving the trolley.

FLEXIBILITY

- Various cage model mini-racks can be installed. These racks are removable, autoclavable and easily interchangeable.





LIGHTING CONTROL SYSTEM



USER FRIENDLY TOUCH SCREEN

The NEW Transit Line HD is designed to accommodate even more cages, providing extra space for your experiments. With the addition of the NEW humidification control in the Recovery Rack, humidity is now easily adjustable.

Recovery rack maintains every cage at a define temperature and humidity, mitigating the impact of dry air when higher temperatures are needed for animal recovery



WIRELESS MONITOR CAGE

IThe IVC Wireless Monitor Cage is a validation tool designed to check the air distribution and pressure differential in systems made up of an air handling unit and rack/s running in either positive or negative pressure mode.

Air Changes per Hours (ACH) and Pressure (Pa) are parameters evaluated to ensure the reproducibility of the air conditions in all cages. Each cage must receive and exchange the similar amount of air at similar speed (lower than 0.2 -0.3 m/s)

USER FRIENDLY

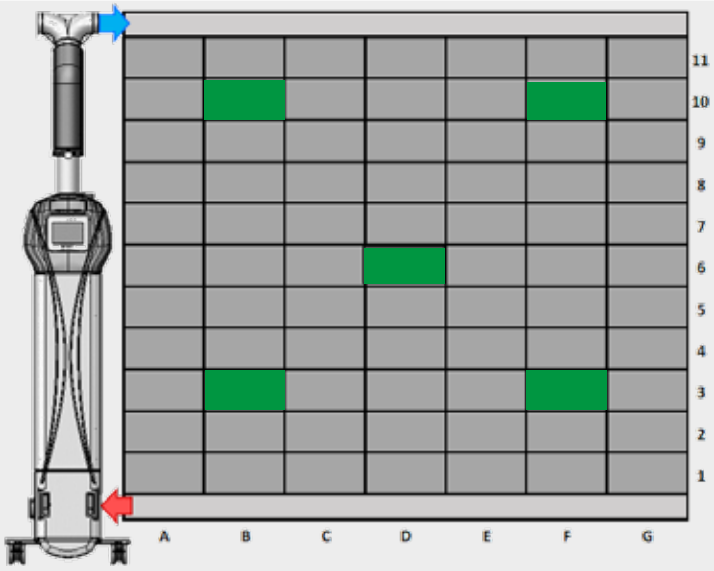
The measurement output will be for each position a "PASS" or "FAIL" signal, that indicates if the measured values were or not in the acceptance range.

FROM MEASUREMENT TO REPORT

The monitor cage can also be connected via Bluetooth with a computer. It becomes also possible to use the data from measurements to generate a report that allows the client to self-certificate its IVC rack without the need of an external authority.

NO MORE WIRES

The Wireless Monitor Cage is equipped with a battery.



Useful to periodically check the IVC system is working within the range of determined parameters



WMC MANAGER-PRO SOFTWARE

WMC Manager-PRO software implements the Monitor Cage functions.

OBTAIN A DETAILED VALIDATION DOCUMENT

Not only "PASS" or "FAIL" results, but a Test Report with the ACH and pressure values measured

CHOOSE THE REPORT OPTIONS

Evaluation mode: standard or Tiz-Bifo)

HAVE LIMITLESS MEMORY

All data and measurements are saved in a database integrated in the software, with the possibility of transferring them to PC





Not only "PASS" or "FAIL" results, but a Test Report with the ACH and pressure values measured

OPERATING MODELS:

- **LIVE MEASUREMENT**

Check the ACH and pressure values in any position of the rack, without the need to select the desired positions in advance. Measured values are not recorded.

- **HOMOGENEITY TEST**

Check the ACH and pressure values in any position of the rack, without selecting the desired positions in advance. The Homogeneity Test returns a detailed test report of the overall status of the system.

- **LONG TERM MEASURE**

A certain number of measurements of ACH and pressure values are repeated in a defined time laps, placing the cage in a testing position.
The measured values are reported in a detailed test report.
- Online mode: no measured values are stored in the WMC monitor cage, but on the PC.
- Offline mode: all measured values are stored in the WMC monitor cage.

CAGE LINERS

DISPOSABLE CAGE INSERTS

Tecniplast has developed a series of liners to be used inside existing plastic cage bodies. Those are made of a very thin layer of polyethylene stackable one inside the other.

COMBINING THE ADVANTAGES OF DURABLE AND DISPOSABLE

Tecniplast disposable cage liners are designed to be used in a durable plastic cage, combining the solidity and reliability of a durable plastic cage with the advantages of a disposable one.



COST EFFECTIVE SOLUTION

Disposable liners can be used in specific situations, in contingencies where washing capabilities are imited or non-existent.

FLEXIBILITY

Cage liners have been developed in order to address unmet market needs for special applications as:

- Irradiation studies
- Imaging
- Toxicology studies
- Quarantine
- Disaster planning



Product specifications	
Available for:	1145T - 1284L - 1285L - GM500 - GM500P - EM500 - 1245ISO - 1290D - 1291H - GR900 - ISORat900
Material	APET

The SUMC system is the disposable housing solution made of recycled plastic providing the traditional Tecniplast IVC performance and reliability, designed for special/temporary applications and to be complementary to durable cages.

From transport to IVC and vice-versa



FLOOR AREA: 501 CM^2/77.66 IN^2

FLEXIBILITY: ONE CAGE FOR MANY PURPOSES

SUMC can be the ideal solution for specific needs:

- Animal transportation
- Quarantine
- Stocking contingency caging in case of an emergency
- Temporary housing solutions
- Irradiation studies
- Satellite facilities with limited washing capabilities
- Work in biotech start-up companies with limited resources

FROM TRANSPORT TO IVC AND VICE-VERSA

- Receiving SUMC cages in transport configuration, it is enough to fit the IVC adaptors and top to get the IVC configuration, which is compatible with all Green Line racks
- Transport bottle is specially designed to avoid vibration related water leaks

ANIMAL WELFARE AND ERGONOMICS

- In IVC configuration air inlet and outlet nozzles are placed in the top to avoid air drafts and consequent animal stress
- Designed in transparent A-PET to provide better visibility
- Possibility to stack 115 cage bases in 1 meter to save space

READY TO USE CONFIGURATION

SUMC can be delivered with pre-bedded cage body and pre-filled water bottle *(please refer to your local dealer to check availability of this product)*.

Sterile bedding and irradiated water for a ready to use configuration: easier and quicker handling of the cages

- Bedding delivered in paper tissue tea-bag placed inside the cage base: built-in paper enrichment. No need for extra purchases and component processing
- Possibility to choose between Aspen and Corn Cob bedding
- Reverse Osmosis (RO) water, gamma irradiated



COMPANY WITH QUALITY SYSTEM CERTIFIED BY DNV GL = ISO 9001 =

COMPANY WITH ENVIRONMENTAL SYSTEM CERTIFIED BY DNV GL = ISO 14001 =

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CAT167/ING - Rev Nov2024

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