

Individually Ventilated
Cages System

More Comfortable, More Secure, More Reliable

LAB & Bio[®]
LABORATORY & BIOLOGY



URE/Tac

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Korea Institute of
Industrial Technology
developed jointly

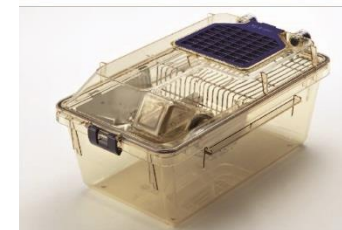


Individually Ventilated Cages System



Infection prevention

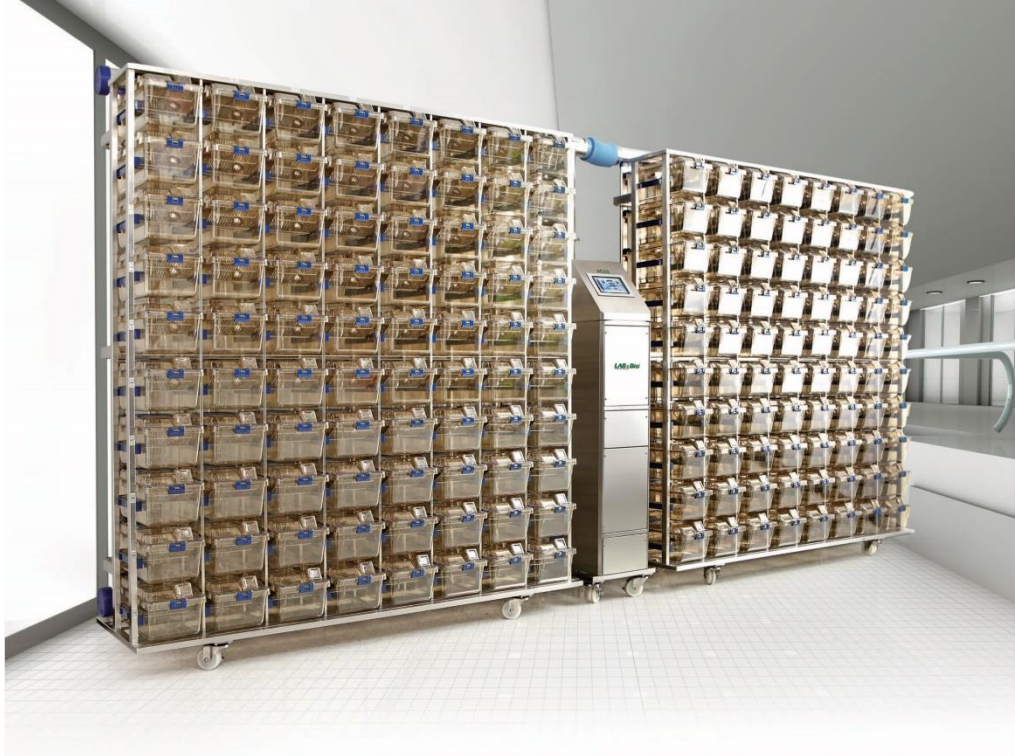
Clean Flux has a perfect air circulation system to prevent cross-contamination between human and animal and also between cages.



Clean Flux, our innovative rodent caging system, protects animals, their caretakers and the environment from the infection which probably can occur among cages, and maintain an optimal environment for many animals in a small space.

Clean Flux system has an air circulation type of cage, fresh air passing through the HEPA filter air cleaner is supplied to each of the cage, and the air inside the cage is discharged to the outside through the HEPA filter.

All the real time parameters such as Temperature, Humidity, Carbon Dioxide, ACH, Pressure inside the cage, and Errors are displayed on one page, so you can control the system easily. **Clean Flux** has an effective sensing and control mechanism of the harmful gas such as Carbon Dioxide and Ammonia. When it detects, automatic reduction mechanism starts automatically and quickly reduce the concentration of the gases.



Efficient use of space

Large number of animals can be breeding safely and comfortably in a small space.



Layout



ACU can be mounted on top of Rack Ass'y

Air Control Unit can be mounted on top of the breeding system to maximize the space efficiency. No vibration, very quiet.





Convenient Air Control Unit



Convenient operation

By using the touch screen, easy to manipulate. Positive pressure and negative pressure can be adjusted with a simple touch.

High-performance HEPA filter

Apply the proven HEPA filters with DOP test. Easy replacement and cleaning

Excellent corrosion and chemical resistance

Made of stainless steel, has an excellent corrosion resistance and chemical resistance.

Reliable control system

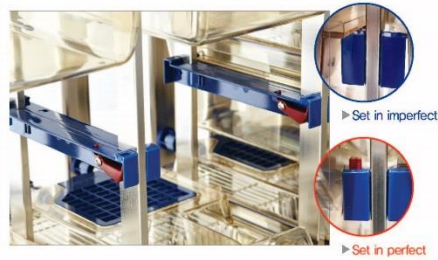
Made by package type, the cause of trouble of control system is reduced dramatically.

General Specifications

Frame material : Stainless Steel(STS-304)
Deflection temperature of the cage material: 174°C
Electrical Specification : 1ø 220V 60Hz
Cage Material : Polysulfone
Cage autoclave limitation ; 135°C 30Min. 150Cycle
Filter : 2 Pre-Filters/2 HEPA Filters

Guide

- Made from PSU that can be sterilized, and has a convenient structure to attach and remove.
- Guide have a visual indicator, it flags when the cage seats properly.



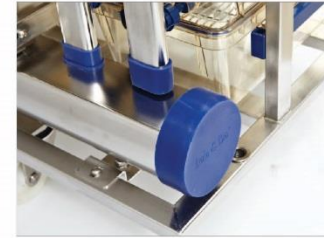
Check valve in the air supply and exhaust

- The air flow is stopped when the Cage is removed.
- Supplied with a constant flow rate, saving energy.
- Detached easily by a one-touch, convenient to clean nozzles



Duct

- Easy disassembly and cleaning due to simple structure
- Easy to clean and sterilize due to silicone rubber sealing joints.



High-temperature sterilization and Excellent corrosion resistance

- Made of stainless steel, available for High-temperature sterilization and has an excellent corrosion resistance and chemical resistance.





Structure for the optimal animal welfare

- Prevent direct contact with the wind (None of the animals affected by the wind speed)
- Optimization of the cage shape by CFD analysis
- Supply fresh air in steady speed under 0.2mps with good pattern of air distribution.
- Maintain optimum environmental conditions such as noise, vibration, differential pressure, ACH and concentration of CO₂, NH₃.
- Cage is designed available as well as positive pressure and negative pressure.

Stacking efficiently

- A large number of cages can be stacked in a small space.

High-temperature sterilization

- Sterilized by steam at high temperature and pressure, 135°C 30Min and can be used for 150 Cycle repeatedly.



Locking Button

Convenient to open and close the cage due to the simple locking button mounted on the cage cover.

Bottle

It's possible to remove or change bottles without disturbing or stressing the animals. Silicone rubber O-ring for perfect sealing and are fitted with cone shaped STS-316 stainless steel cap.

Air supply and exhaust valves

The air flow is stopped when the Cage is removed.

Cage Top Filter

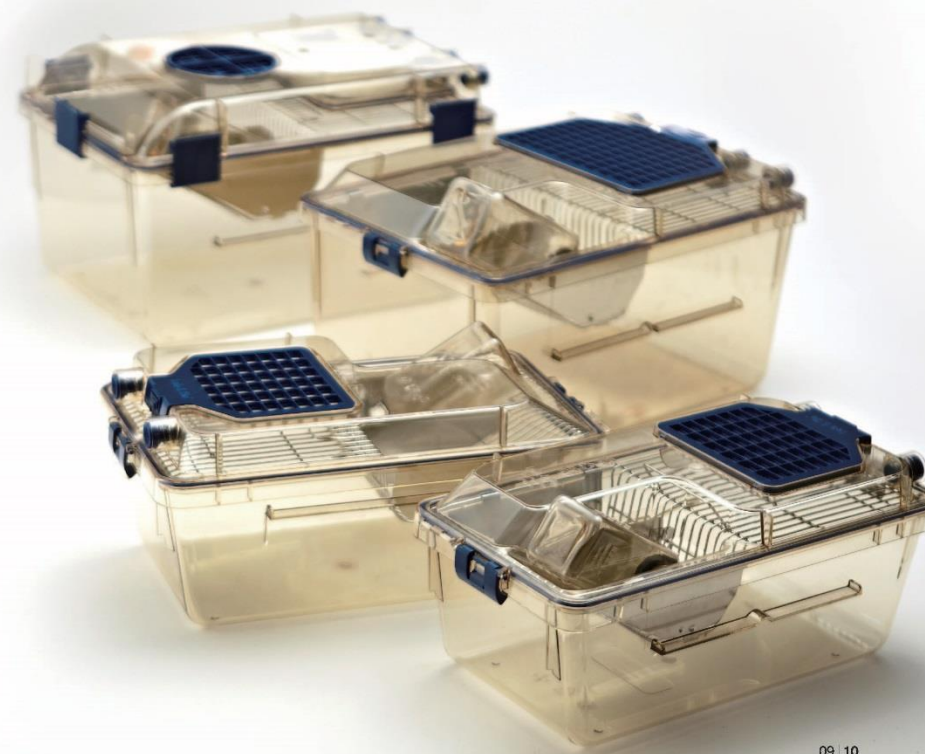
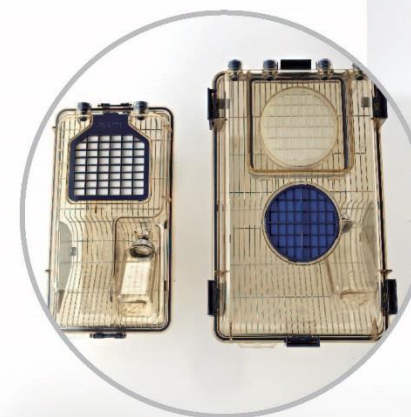
HEPA filter kept in place on the top of the cage by a filter retainer. Retainer has a push type locking structure, which makes it easy to remove and replace the filter. Filter can be washed with water.

Silicon Gasket

The cage top features a silicon gasket, assuring occlusive seal and an ideal containment.

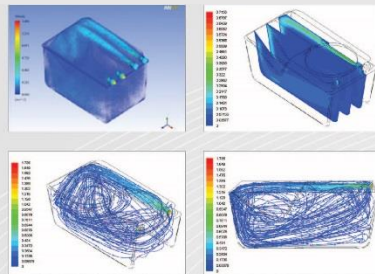
Wire Bar Lid

Easy to observe the inside of the cage, and has a stacking structure. It can be applied to replace with a half wire bar lid style.



Optimum Breeding Environmental Conditions

Provides the best environmental conditions for breeding animals welfare by meeting breeding standards(ILAR,NIH Guide Line).



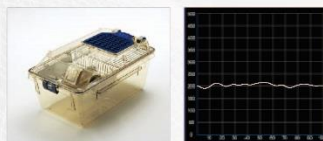
Safety System

Breeding can be safer in case of an emergency through the remote wireless sensing



Display Environmental data in real time status and Storing for Analyzing

The changes of all the environmental factors that are detected are displayed in real time base, and be stored for the analysis later.
Stored data: time, ACH, DP, NH3, CO2, temperature, humidity, wind speed, blower speeds, error status.



Remote Control and Monitoring

You can monitoring and control the system, using a computer network or smart phone wherever you are



Optimal environmental control system

- Based on the pressure difference inside the cage, system automatically control all the environmental factors, such as ACH, temperature, humidity, variation in the concentration of toxic gases.
- It is possible to operate the system partially, you can load only a few cages in the rack system, up to 5% of full loading, and the rest of it leave empty. System will be controlled normally.
- Since the maximum efficiency, depending on the operating conditions, economical operation is possible

Guidelines for Laboratory Animal Care (ILAR, NIH)

VMC(for Mouse) Cage Size : 510.3cm ² (19.2x37.2x13.1)				VRC(for Rat) Cage Size : 895.9cm ² (26.8x41.3x19.6)			
No.of Animal available	Weight(g)	Floor Area/Animal(cm ²)	Height(cm)	No.of Animal available	Weight(g)	Floor Area/Animal(cm ²)	Height(cm)
13	<10	38.7	12.7	8	<100	109.65	17.8
9	10~15	51.6	12.7	6	100~200	148.35	17.8
6	15~25	77.4	12.7	4	200~300	187.05	17.8
5	25<	96.75≤	12.7	3	300~400	258.00	17.8
Guinea Pig Cage Size : 895.9cm ² (26.8x41.3x19.6)							
No. of Animal available	Weight(g)	Floor Area/Animal(cm ²)	Height(cm)	No. of Animal available	Weight(g)	Floor Area/Animal(cm ²)	Height(cm)
2	<350	387.0	17.8	2	400~500	387.00	17.8
1	500<	651.45≤	17.8	1	500<	451.5≤	17.8

Mouse Cage System Standard



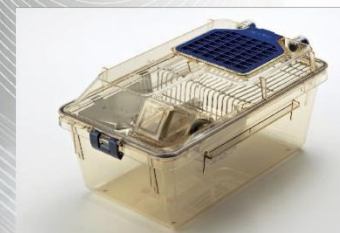
Space for Installation

VMC(Mouse)				
Model Name	WI	DI	HI	Cage Assembled
VMC56S	2100	550	1716	8R7C(56Cage)
VMC56D	2100	880	1716	8R7C(112Cage)
VMC63S	2100	550	1901	9R7C(63Cage)
VMC63D	2100	880	1901	9R7C(126Cage)
VMC64S	2320	550	1716	8R8C(64Cage)
VMC64D	2320	880	1716	8R8C(128Cage)
VMC70S	2100	550	2086	10R7C(70Cage)
VMC70D	2100	880	2086	10R7C(140Cage)
VMC72S	2320	550	1901	9R8C(72Cage)
VMC72D	2320	880	1901	9R8C(144Cage)
VMC80S	2320	550	2086	10R8C(80Cage)
VMC80D	2320	880	2086	10R8C(160Cage)

Product Specifications

VMC(Mouse)				
Model Name	W	D	H	Cage Assembled
VMC56S	1580	527	1716	8R7C(56Cage)
VMC56D	1580	880	1716	8R7C(112Cage)
VMC63S	1580	527	1901	9R7C(63Cage)
VMC63D	1580	880	1901	9R7C(126Cage)
VMC64S	1800	527	1716	8R8C(64Cage)
VMC64D	1800	880	1716	8R8C(128Cage)
VMC70S	1580	527	2086	10R7C(70Cage)
VMC70D	1580	880	2086	10R7C(140Cage)
VMC72S	1800	527	1901	9R8C(72Cage)
VMC72D	1800	880	1901	9R8C(144Cage)
VMC80S	1800	527	2086	10R8C(80Cage)
VMC80D	1800	880	2086	10R8C(160Cage)

Mouse Cage System Wide Type



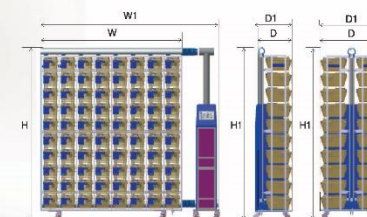
Space for Installation

VMC(Wide Mouse)				
Model Name	Wt	DI	HI	Cage Assembled
VMC54WS	2046	550	2045	9R6C(54Cage)
VMC54WD	2046	870	2045	9R6C(108Cage)
VMC56WS	2280	550	1845	8R7C(56Cage)
VMC56WD	2280	870	1845	8R7C(112Cage)
VMC63WS	2280	550	2045	9R7C(63Cage)
VMC63WD	2280	870	2045	9R7C(126Cage)
VMC72WS	2518	550	2045	9R8C(72Cage)
VMC72WD	2518	870	2045	9R8C(144Cage)

Product Specifications

VMC(Wide Mouse)				
Model Name	W	D	H	Cage Assembled
VMC54WS	1446	521	2045	9R6C(54Cage)
VMC54WD	1446	870	2045	9R6C(108Cage)
VMC56WS	1682	521	1845	8R7C(56Cage)
VMC56WD	1682	870	1845	8R7C(112Cage)
VMC63WS	1682	521	2045	9R7C(63Cage)
VMC63WD	1682	870	2045	9R7C(126Cage)
VMC72WS	1918	521	2045	9R8C(72Cage)
VMC72WD	1918	870	2045	9R8C(144Cage)

Rat Cage System



Space for Installation

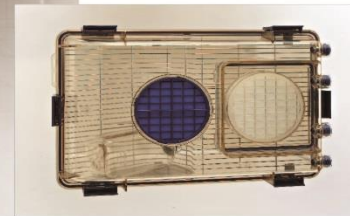
VRC(Rat)				
Model Name	W1	D1	H1	Cage Assembled
VRC30S	2140	550	1900	6R5C(30Cage)
VRC30D	2140	984	1900	6R5C(60Cage)
VRC36S	2440	550	1900	6R6C(36Cage)
VRC36D	2440	984	1900	6R6C(72Cage)

Product Specifications

VRC(Rat)				
Model Name	W	D	H	Cage Assembled
VRC30S	1540	550	1900	6R5C(30Cage)
VRC30D	1540	984	1900	6R5C(60Cage)
VRC36S	1840	550	1900	6R6C(36Cage)
VRC36D	1840	984	1900	6R6C(72Cage)

ABSL-3 Cage System

Animal Biosafety Level-3



VRC(ABSL-3 Type)

- A fully sealed cage, it is possible to operate more than -30 Pascal.
- Ensuring tightness to ± 500 Pascal.
- Suitable for breeding Mouse, Rat, Guinea Pig.
- Ventilation and pressure inside the cage is automatically controlled.
- Date(Time), ACH, DP, NH3, CO2, temperature, humidity, wind speed, blower speeds, and error status are displayed and has an alarm function of upper and lower limit.
- HEPA filter box is detachable to sterilize and cleaning.
- Cage ass'y and filter box can be sterilized with high temperature.

- Convenient locking structure.
- Fully sealed type cage
- Easy to maintain exhaust filter
- Pre-filter is equipped on exhaust line

Product Specifications

VRC(ABSL-3 Type)

Model Name	W	D	H	Cage Assembled
VRC24-P3	1240	550	1900	6R5C(30Cage)
VRC30-P3	1540	984	1900	6R5C(60Cage)
VRC36-P3	1840	550	1900	6R6C(36Cage)

Cage Parts

No.	Classification	Mouse (VMC)	Mouse (Wide-VMC)	Rat (VRC)	Rat, Guinea Pig (BSL3)
1	Cage				
		LB-MC-001 190 x 372 x 130 Floor Area: 502,2cm ² PS (606g)	LB-WMC-001 205 x 364 x 133 Floor Area: 517,4cm ² PS (661g)	LB-RC-001 277 x 423 x 194 Floor Area: 895,9cm ² PS (1284g)	LB-P3-RC-001 277 x 423 x 194 Floor Area: 895,9cm ² PS (1284g)
2	Cover				
		LB-MC-002 198 x 380 x 50 PS (532g)	LB-WMC-002 212 x 370 x 53 PS (557g)	LB-RC-002 285 x 430 x 56 PS (734g)	LB-P3-RC-002 276 x 420 x 70 PS (1093g)
3	Top Filter Plate				
		LB-MC-002-02 134 x 142 x 6,7 PS (62g)	LB-MC-002-02 134 x 142 x 6,7 PS (62g)	LB-RC-002-02 195 x 182 x 6,7 PS (101g)	LB-P3-RC-002-02 φ 111 x 8 PS (24g)
4	Inner Filter Plate				
					LB-P3-RC-002-03 134 x 142 x 6,7 PS (125g)
5	Top Filter				
		LB-MC-002-02-02 134 x 127 x 0,2 Floor Area: 114cm ² 0,3μm, 99,97%	LB-MC-002-02-02 134 x 127 x 0,2 Floor Area: 114cm ² 0,3μm, 99,97%	LB-RC-002-02-02 194 x 168 x 0,2 Floor Area: 252,4cm ² 0,3μm, 99,97%	LB-P3-RC-002-02-02 φ 112 x 0,2 Floor Area: 98,5cm ² 0,3μm, 99,97%
6	Inner Filter				
					LB-P3-RC-002-02-03 φ 122 x 20 Floor Area: 116,9cm ² 0,5μm, 97,9%

No.	Classification	Mouse (VMC)	Mouse (Wide-VMC)	Rat (VRC)	Rat, Guinea Pig (BSL3)
7	Main Seal				
		LB-MC-002-04 190 x 370 x 3,0 SILICONE	LB-MC-002-04 206 x 365 x 3,0 SILICONE	LB-RC-002-04 277 x 422 x 1,2 SILICONE	LB-P3-RC-002-04 277 x 422 x 3,6 SILICONE
8	Wire Lid				
		LB-MW-001 172 x 360 x 68 STS304 (391g)	LB-WMW-001 186 x 350 x 68 STS304 (391g)	LB-RW-001 250 x 400 x 79 STS304 (583g)	LB-RW-001 250 x 400 x 79 STS304 (583g)
9	Bottle Set				
		LB-MB-001 55 x 55 x 172 Capacity: 250ml PS (18g), STS304 (32g)	LB-MB-001 55 x 55 x 172 Capacity: 250ml PS (18g), STS304 (32g)	LB-RB-001 75 x 75 x 195 Capacity: 500ml PS (76g), STS304 (32g)	LB-RB-001 75 x 75 x 195 Capacity: 500ml PS (76g), STS304 (32g)
10	Bottle Cap				
		LB-MB-001-01 φ 45,8 x 63 STS304 (32g)	LB-MB-001-01 φ 45,8 x 63 STS304 (32g)	LB-RB-001-01 φ 45,8 x 68 STS304 (34g)	LB-RB-001-01 φ 45,8 x 68 STS304 (34g)
11	Bottle				
		LB-MB-001-02 55 x 55 x 124,5 Capacity: 250ml PS (18g)	LB-MB-001-02 55 x 55 x 124,5 Capacity: 250ml PS (18g)	LB-RB-001-02 75 x 75 x 148 Capacity: 500ml PS (76g)	LB-RB-001-02 75 x 75 x 148 Capacity: 500ml PS (76g)
12	Name Plate				
		LB-MN-001 60 x 80 x 5 PS (22g)	LB-MN-001 60 x 80 x 5 PS (22g)	LB-RN-001 80 x 100 x 5 PS (30g)	LB-RN-001 80 x 100 x 5 PS (30g)