CATALOGUE 2017

your science, our devices

VENTILATION, PHARMACOLOGY, PHYSIOLOGY


PAIN AND INFIAMMATION


MOTORY COORDINATION, GRIP, STRENGTH, ACTIVITY


VENTILATORS AND GAS ANESTHESIA


BEHAVIOUR, CONDITIONING, REWARD


BEHAVIOUR, MAZES, TRACKING


TISSUE BATHS, TRANSDUCERS, RECORDERS


MISCELLANEOUS, ECT, LMD


BLOOD PRESSURE, VITAL FUNCTIONS


METABOLISM, FEEDING BEHAVIOUR


MUROMACHI MICROWAVE FIXATION

ugo basile®

TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com
sales@ugobasile.com

what's new

ugo basile®
TRANSFORMING IDEAS INTO INSTRUMENTS

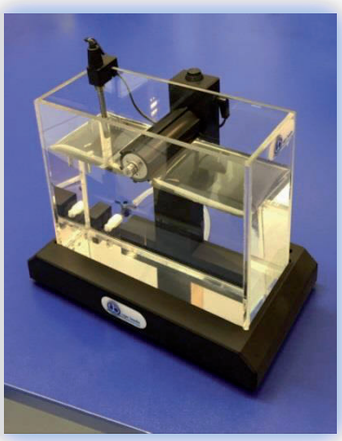
STARTLE RESPONSE/PPI

a new device in the BEEHIVE family

beehive
cage-manager system.
A single touch-screen controller, to manage all UB conditioning cages.
Ask for details!

NEW GENERATION INSTRUMENTS: NEW LOOK, NEW SOFTWARE, NEW DEVICES... SAME RELIABILITY

NEW Forced Swim Test



your trusted partner...

roadmapping the future of behavioral research!

ugo basile®
TRANSFORMING IDEAS INTO INSTRUMENTS

your science, our devices

VENTILATORS and GAS ANESTHESIA

TISSUE BATHS, TRANSDUCERS, STIMULATORS

MISCELLANEOUS, ECT, LESION MAKING DEVICE

BLOOD PRESSURE, VITAL FUNCTIONS

METABOLISM, FEEDING BEHAVIOUR

MUROMACHI MICROWAVE FIXATION

Ugo Basile: more than 10,000 citations

VENTILATORS and GAS ANESTHESIA

PAIN AND INFIAMMATION

MOTORY COORDINATION, GRIP, STRENGTH, ACTIVITY

VENTILATORS AND GAS ANESTHESIA

BEHAVIOUR, CONDITIONING, REWARD

BEHAVIOUR, MAZES, TRACKING

TISSUE BATHS, TRANSDUCERS, RECORDERS

MISCELLANEOUS, ECT, LMD

BLOOD PRESSURE, VITAL FUNCTIONS

METABOLISM, FEEDING BEHAVIOUR

MUROMACHI MICROWAVE FIXATION

ugo basile®

TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com
sales@ugobasile.com

www.ugobasile.com

Mouse Ventilator

Cat. No. 28025

General

This new Respirator, which completes the well known Ugo Basile line of Ventilators, features:-

- The **tidal volume**, in the range 0.1-1 ml (or 0.05-0.5 with the smaller piston installed), can be selected via its knob either while the pump is running or at a standstill. The stroke volume scale is ample, provided with precise engraved marks.
- The **rate**, selected by a knob, is indicated by a 3-digit solid state display, in the range 60-300 strokes per minute.
- Suitable channels and ports provide the witching of the air flow, with practically **no dead space**.
- A unique **variable stroke linkage** mechanism operates the piston.

The reciprocating motion is adjusted and transmitted to the piston by rods and articulated joints only, which leads to minimal wear, no backlash, silent operation and exact stroke reproducibility.

Unique Design **Reliable**

Compact **Silent**

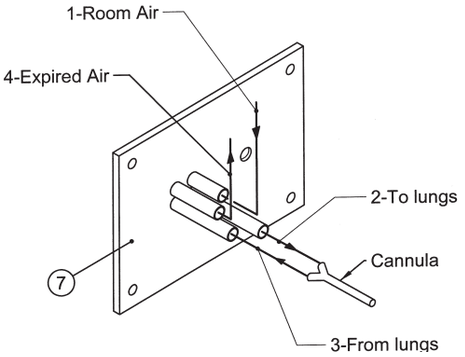
Main Features

- Ideal for use with mice, small birds and perinatal rats
- Optional 0.5 ml cylinder/piston assembly
- Purely mechanical, with impeccable finishing: lifetime lasting
- Quiet operation and negligible electrical noise

Ugo Basile: more than 10,000 citations

The instrument is compact and light, cm 20x13x18.5 and 2.5 Kg, and it is self-contained: in other words, it embodies its power supply which feeds the geared motor, its feedback controller and the rate display.

The Connection Square



As illustrated in the drawing above, and pictured below, a connection square of four ports include:-

1. intake of air or other non-explosive gas mixture
2. delivery of air to the animal lungs
3. return air from animal
4. exhaust, for sampling, partial recycling, testing positive expiration pressure, etc.

so closely packed, that the connection tubes are cut in different lengths, to ease the insertion of the tubing.


28025 Back

Start / Stop Model

A Mouse Ventilator version is available, Cat. **28125**, which embodies a controlled pause feature.

The synchronised START/STOP function gives the operator a means to stop and restart the respirator at "full lungs" point, via an external trigger pulse, when it is beneficial if not essential to minimize any extraneous movement of the anesthetized animal during electrophysiological recording, X-ray and imaging, etc.

Specifications

Rate	**60 to 300** strokes for minute
Rate Read-out	on digital display
Stroke Volume	0.1 to 1ml (with standard 1 ml piston) 0.05 to 0.5ml (optional 0.5ml piston) Reproducibility ±2%
Volume Scale	precision engraved, 0.05ml divisions
Start-Stop	by synchronised command (model 28125 only)

Power Requirements : 115 or 230V, 50/60Hz,10W max.

Physical

Dimensions	20x13x18.5cm
Net weight	2.2Kg
Shipping Weight	4.6Kg approx.
Packing	40x39x30cm

Ordering Information

28025	**MOUSE VENTILATOR**, complete with following standard accessories :-
28025-010	1ml Cylinder/piston assembly
28025-302	Instruction Manual (on CD)
28025-321	Perspex Vertical Lid
28025-323	Cannula/Y-connection assembly (0.7mm & 1mm ID), tube, etc., in a plastic case
E-WP008	Mains Cord

Options

28025-5	**Mouse Ventilator**, with 0.5ml cylinder/piston assy. & standard accessories
28025-005	0.5ml Cylinder/piston assembly
28125	**Mouse Ventilator,** with **synchronised START/STOP** feature, with 1ml cylinder/piston assy. & standard accessories
28125-5	**Mouse Ventilator,** with **synchronised START/STOP** feature, with 0.5ml cylinder/piston assy. & standard accessories

Bibliography

- M. Wang et alia: "**The responses of pulmonary and systemic circulation and airway to anaphylactic mediators in anesthetized BALB/c mice**" Life Sciences 147: 77-84, 2016
- M.K. Sadegh et alia: "**Impaired contractility and detrusor hypertrophy in cavin-1-deficient mice**", 2016
- M.M.J. Farnham et alia: "**Surgical preparation of mice for recording cardiorespiratory parameters in vivo**" J. Neuroscience Methods 248: 41-45, 2015
- K. Swärd et alia: "**Elevated pulmonary arterial pressure and altered expression of Ddah1 and Arg1 in mice lacking cavin - 1/PTRF**" Physiological Reports Vol.1 (e00008), 2013
- M.S.Karbalaei et alia: "**Impaired contractility and detrusor hypertrophy in cavin-1-deficient mice**" Eur.J.Pharmacol, 689 (1-3): 179-185, 2012

www.ugobasile.com

Rodent Ventilator

Cat. No. 7025

General

The 7025 Rodent Ventilator is a volume-controlled mechanical ventilator (according to Starling's ventilator method), designed for use with rats, guinea pigs, mice and small birds.

The 7025 drive consists of a variable speed geared motor linked by a novel variable stroke mechanism to easily interchangeable cylinder/piston assemblies.

In particular, the **7025 can be equipped with 5, 10 or 30ml** cylinder/piston assembly.

Its precisely regulated geared-motor speed provides the most accurate and reliable stroke rate control of any respirator available.

The operation of the 7025 may be "paused" by an external TTL logic signal.

The picture features a Rodent Ventilator 7025, together with the 6025 for Cat/Rabbit

Best available Starling Pumps

THE CHOICE OF THE CRITICS!

"We have four of your respirators in our extended lab and they are wonderful - as is your service"

Dr. Nicholas Price, Monash University

Main Features

- Interchangeable cylinder/piston assemblies (5, 10, 30ml)
- Quiet operation, both acustically and electrically (negligible R.F. broadcasting)
- Reliable mechanics and impeccable finishing: lifelong lasting
- Synchronised START/STOP function available as optional

Ugo Basile: more than 10,000 citations

Instrument description

The unique linkage mechanism insures that:

1) The piston almost touches the cylinder end with each stroke, regardless of the pre-set volume, thus insuring all air taken into the pump is expelled with each stroke.
2) The volume, clearly indicated on a **stationary dial**, is adjustable by means of a knob while the pump is either running or at standstill.
3) The reciprocating motion is generated, adjusted and transmitted to the piston by rods and articulated joints only.

The lack of sliding friction leads to:

a) practically no wear
b) no backlash and hence silent operation and exact stroke reproducibility.

Hook-up to animal

Four ports (*Intake, To Animal, From Animal* and *Exhaust*) allow flexibility in air channelling.

The input may be room air or any non-explosive gas mixture. The exhaust air may be partially or totally recycled or collected for analysis.

Ventilator Controls

The speed control knob adjusts the geared motor to the desired speed, which is indicated on the 3-digit LED display labelled STROKES P.M.

The operation of Ugo Basile Ventilators may be "paused" by an external TTL logic signal.

Start / Stop Model

For more demanding electrophysiological-pharmacological investigations, in particular when the operation of the Ventilator is software controlled, a **synchronised command** is available to START-STOP the Ventilator at completed forced inspiration.

Ask for special models 7125.

Specifications

Rate	10 to 180 strokes for minute
Rate Read-out	digital display
Stroke Volume	0.5 to 5; 1 to 10 or 3 to 30 ml, depending on cylinder/piston
Stroke Vol. Scale	1-10 ml
Stroke Vol. Reprod.	±2%

Universal input 85-264 VAC, 50-60Hz, 40 VA max.

Physical

Dimensions	27x26x19cm
Net weight	9.5Kg
Shipping Weight	16Kg approx.
Packing	67x42x53cm

Ordering Information

7025	**RODENT VENTILATOR**, complete with following standard accessories:
7026	10ml Cylinder/piston assembly, complete
7032	Perspex Lid
7033	Lithium-Grease Tube
7044	Y-Canula
7025-302	Instruction Manual (on CD)
E-WP 008	Mains Cord

Other available models and accessories

7025-5	**RODENT VENTILATOR**, as above, 5ml
7025-30	**RODENT VENTILATOR**, as above, 30ml
7128	5ml Cylinder/piston assembly, complete
7027	30ml Cylinder/piston assembly, complete
7025-150	Anesthesia Kit

Models with synchronised START/STOP feature

7125	**Rodent Ventilator**, 10ml
7125-5	**Rodent Ventilator**, 5ml
7125-30	**Rodent Ventilator**, 30ml

See also our Anesthesia Systems, series 21100, the ideal match to our Ventilators!

Bibliography

- A. Andersen et alia: "**sGC–cGMP–PKG pathway stimulation protects the healthy but not the failing right ventricle of rats against ischemia and reperfusion injury**" Intl. J. Cardiology 233: 674-680, 2016
- R.H Hassing Frandsen et alia: "**No apparent role for T-type Ca2+ channels in renal autoregulation**" Eur. J. Physiology 468 (4): 541-550, 2016
- J. Johnsen et alia: "**The remote ischemic preconditioning algorithm: effect of number of cycles, cycle duration and effector organ mass on efficacy of protection**" Basic Res in Cardiology, March 2016
- S. Jeuthe et alia: "**Closed-chest small animal model to study myocardial infarction in an MRI environment in real time**" Intl. J. Cardiovascular Imaging 31 (1): 115-121, 2015
- J.K. Marshall et alia: "**Intra-Operative Tissue Oxygen Tension Is Increased by Local Insufflation of Humidified-Warm CO2 during Open Abdominal Surgery in a Rat Model**" PlosOne April 2015

www.ugobasile.com

Cat/Rabbit Ventilator

Cat. No. 6025

General

The 6025 Cat/Rabbit Ventilator is a volume-controlled mechanical ventilator (according to Starling's ventilation method), designed for use with cats, rabbits and animals of similar size.

The 6025 drive consists of a variable speed geared motor linked by a novel variable stroke mechanism to easily interchangeable cylinder/piston assemblies.

In particular, **the 6025 can be equipped with 50 or 100ml cylinder/piston assembly**.

Its precisely regulated geared-motor speed provides the most accurate and reliable stroke rate control of any respirator available

The operation of the 6025 may be "paused" by an external TTL logic signal.

The picture features a Rodent Ventilator 7025, together with the 6025 for Cat/Rabbit

Best available Starling Pumps

THE CHOICE OF THE CRITICS!

Main Features

- Interchangeable cylinder/piston assemblies (50 and 100ml)
- Quiet operation, both acustically and electrically (negligible R.F. broadcasting)
- Reliable mechanics and impeccable finishing: lifelong lasting
- Synchronised START/STOP function available as optional

Ugo Basile: more than 10,000 citations

Instrument description

The unique linkage mechanism insures that:

1) The piston almost touches the cylinder end with each stroke, regardless of the pre-set volume, thus insuring all air taken into the pump is expelled with each stroke.
2) The volume, clearly indicated on a **stationary dial**, is adjustable by means of a knob while the pump is either running or at standstill.
3) The reciprocating motion is generated, adjusted and transmitted to the piston by rods and articulated joints only.

The lack of sliding friction leads to:

a) practically no wear
b) no backlash and hence silent operation and exact stroke reproducibility.

Hook-up to animal

Four ports (*Intake, To Animal, From Animal* and *Exhaust*) allow flexibility in air channelling.

The input may be room air or any non-explosive gas mixture. The exhaust air may be partially or totally recycled or collected for analysis.

Ventilator Controls

The speed control knob adjusts the geared motor to the desired speed, which is indicated on the 3-digit LED display labelled STROKES P.M.

The operation of Ugo Basile Ventilators may be "paused" by an external TTL logic signal.

Start / Stop Model

For more demanding electrophysiological-pharmacological investigations, in particular when the operation of the Ventilator is software controlled, a **synchronised command** is available to START-STOP the Ventilator at completed forced inspiration.

Ask for special models 6125.

Specifications

Rate	10 to 100 strokes for minute
Rate Read-out	digital display
Stroke Volume	10 to 50; 20 to 100, depending on cylinder/piston installed
Stroke Vol. Scale	10-50 ml
Stroke Vol. Reprod.	±2%

Universal input 85-264 VAC, 50-60Hz, 40 VA max.

Physical

Dimensions	27x26x19cm
Net weight	10.5Kg
Shipping Weight	16Kg approx.
Packing	67x42x53cm

Ordering Information

6025	**CAT/RABBIT VENTILATOR**, complete with following standard accessories:
6026	50ml Cylinder/piston assembly, complete
6027	Set of 2 Lip-Seal Rings for 50ml piston
7032	Perspex Lid
7033	Lithium-Grease Tube
7034	Set of 3 Hex. Wrenches (2, 2.5, 3 mm)
6044	Y-Canula
6025-302	Instruction Manual (on CD)
E-WP 008	Mains Cord

Other available models and accessories

6025-100	**Cat/Rabbit Ventilator**, as above, 100ml
6029	Set of 2 Lip-Seal Rings for 100ml piston
6025-150	Anesthesia Kit

Models with synchronised START/STOP feature

6125	**Cat/Rabbit Ventilator**, 50ml
6125-100	**Cat/Rabbit Ventilator**, 100ml

See also our Anesthesia Systems, series 21100, featured in the picture together with a 6026 Ventilator.

The ideal match to our Ventilators!

Bibliography

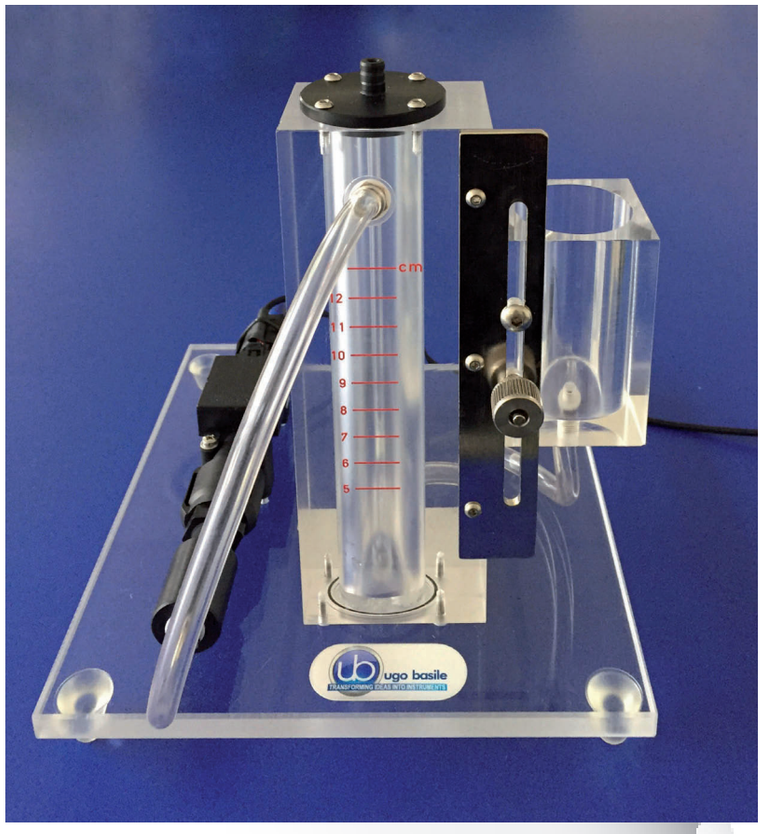
- F. Wetterling et alia: "**Regional and temporal variations in tissue sodium concentration during the acute stroke phase**" Magnetic Resonance in Medicine 67 (3): 740-749, 2012
- A. Ahmed et alia: "**Development of an In Vitro Model to Assess Deposition of Aerosol Particles in a Representative Replica of the Rat's Respiratory Tract**" J. of Aerosol Med. 25 (3): 169-178, 2012
- L. Monassier et alia: "**Prevention by NMDA receptor antagonists of the centrally-evoked increases of cardiac inotropic responses in rabbits"** Br. J. Pharmacol. 111 (4): 1347–1354, 2012
- T. Hoch et alia: "**Modulation of the amplitude of γ-band activity by stimulus phase enhances signal encoding**" Eur. J. Neuroscience 33 (7): 1223–1239, 2011
- T. Tchumatchenko et alia: "**Ultrafast Population Encoding by Cortical Neurons**" J. Neuroscience 31 (34): 12171-12179, 2011

www.ugobasile.com

Bronchospasm Transducer

New model for digital recorders

Cat. No. 17020



General

This transducer is designed to perform the bronchospasm test on laboratory animals and is particularly suitable for connection to UGO BASILE DataCapsule-*Evo* Recorder, and to other digital data acquisition systems.

It enables the research worker to evaluate the spasm-inducing effect of drugs having a very wide range of action, not necessarily intended to act on respiratory dynamics.

The Bronchospasm Transducer 17020 is also a useful research tool for screening substances inducing the opposite effect, both those causing active bronchodilation in basal conditions and those which antagonize test drugs such as histamine, bradykinin, etc.

It is basically an air flow meter provided with a water input valve with adjustable pressure threshold.

The measuring device is a compact unit made entirely of Perspex; power supply and controls are located in a separate electronic box.

- Evaluates the bronchospasm inducing effect of drugs
- The new model records the volume (with a precision of 0.1ml)

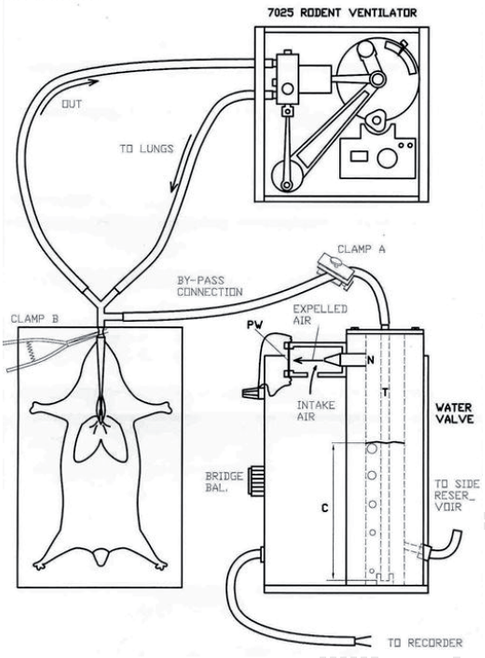
Main Features

- Simple and reliable method to assess airflow resistance
- The effect of bronchodilators agents is quickly assessed
- A complete set-up includes optional animal ventilator and data acquisition system (or chart recorder). Ask for details!

Ugo Basile: more than 10,000 citations

Experimental Layout

The experimental layout follows the well-known Konzett-Roessler arrangement (see BIBLIOGRAPHY) with the anaesthetized subject breathing via a reciprocating pump, according to Starling's mode of operation. See sketch below:



Sensitivity

The sensitivity of the instrument in comparison with conventional Konzett-Roessler apparatus is illustrated in the table below:

Minimum dosage in µg/Kg giving significant readings

	K-R Apparatus	UGO BASILE 17020
Histamine	3 - 6	0.3 - 0.6
Acetylcholine	20 - 40	3 - 10
Serotonin	6 - 15	1 - 3

Air Flow Meter

The recording system monitors respiratory dynamics by providing a tracing appearing as a succession of spikes.

When bronchospasm occurs, overpressure displaces the water column inside the T-tube and air bubbles through the water, escaping through an air flow tranducer thus generating an electrical signal.

When Bronchodilators are administered, overpressure is reduced to below normal breathing values, as the bronchi exert less aerodynamic resistance to forced inspiration.

The tracing will decrease in amplitude to a marked degree, enabling the action of bronchodilators to be assessed.

Compared to the previous model, which simply recorded the number of events, **the new model also provides the volume, with a precision of 0.1ml**.

Controls

The power supply and the controls are located in a separate cabinet of original design.

Ordering Information

17020 **Bronchospasm Transducer**, complete with following parts:
17020-302 Instruction Manual (on CD)

Ask for details about:

7025 Rodent Ventilator
17308 DataCapsule-Evo Digital Recorder

Physical

Weight	2.7Kg
Shipping Weight	5.2Kg
Packing	40x39x30cm

Bibliography

Method Paper

- **H.Konzett & R. Roessler**: Arch. Exp. Path. Pharmakol.: 195, 171, 1940

Papers which include mention UB Models

- K. Ogino et alia: "**PM2.5-Induced Airway Inflammation And Hyperresponsiveness In Nc/Nga Mice**" Environmental Toxicol. 10.1002/tox.22303, ***June 2016***
- I. Murakami et alia: "**Rebamipide Suppresses Mite-Induced Asthmatic Responses in NC/Nga Mice**" Am. J. Physiol., Lung Cellular and Molecular Physiology 309(8): L872-878, ***2015***
- K. Ogino et alia: "**Anti-inflammatory Effect of Arginase Inhibitor and Corticosteroid on Airway Allergic Reactions in a Dermatophogoides farinae-induced NC/Nga Mouse Model**" Inflammation 36 (1): 141-151, 2013
- S.J.S. Flora et alia: "**Interactive effect of arsenic and fluoride on cardio-respiratory disorders in male rats: possible role of reactive oxygen species**" BioMetals 24 (4): 615-628, 2011
- N.R.F. Nascimento et alia: "**1,8-Cineole induces relaxation in rat and guinea-pig airway smooth muscle**" J. Pharmacy and Pharmacol. 61 (3): 361-366, 2009

www.ugobasile.com

Gas Anesthesia Systems

Cat. No. 21100

General

The Ugo Basile New Gas Anesthesia is a compact, modular and reasonably-priced system, intended to match the highest technical requirements of animal labs that do not compromise on quality.

A wide range of options and accessories are available, most of which can be added in a scalable manner, making the system modular and with an excellent value for price!

Typical anesthesia procedures involve an induction phase and a maintenance phase, which require at least:

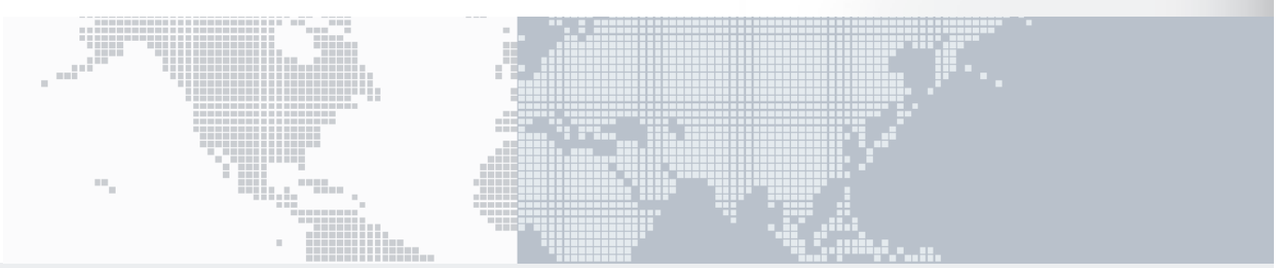
- Flow-meter and anesthetic Vaporizer
- Induction box and/or mask with breathing circuit
- Scavenger or flow hood (for gas anesthetic removal)

The Ugo Basile New Gas Anesthesia system include all of the above! ... and much more!

Portable

Modular

- **THE IDEAL MATCH TO UGO BASILE LINE OF VENTILATORS**



Main Features

- Digital Flowmeter with wide range (up to 16 litres per minute) for multiple animal delivery
- Up to six Animals with one Station
- Manifold for mask/induction-box switch and full range of accessories
- NEW Tec3 Vaporizers (non-refurbished)

Ugo Basile: more than 10,000 citations

Overview

The unique digital flowmeter, coupled to non-refurbished vaporizers for Isoflurane or Sevoflurane, result in an innovative yet sturdy and reliable system to anesthetize animals of virtually any size and up to 6 animals simultaneously.

An ample selection of modular components and accessories enables the user to customize and expand the anesthesia system upgrading from a **basic** (flowmeter & vaporizer) to a **full system** (with induction boxes, breathing circuits with masks of any size, switch valves, multiple delivery systems active or passive scavengers, etc.)

The blue 4mm thick aluminum rack has a highly resistant paint to protect against stains from aggressive anesthetic liquids & solvents.

Two universal attachment blocks are mounted on the back, to connect the device easily to any rail or mobile floor model anesthesia rigs of sizes 25x8mm up to 35x10mm.

Digital Flowmeter

The Ugo Basile Gas Anesthesia System includes a unique digital flowmeter.

Its wide flow range (from 0.3 to 16 l/min.) and fine resolution (0.1 l/min.) guarantees enough gas flow to anesthetize up to 6 animals simultaneously!

Small and large animals could be anesthetized with the same system (virtually, from mouse to horse!)

Nose-cone/Masks with diaphragm

Unlike many rodent masks available on the market, these masks incorporate a latex diaphragm, which holds the rodent nose, keeping the animal in correct position and ensuring a continuous positive flow of fresh oxygen & anesthetic.

The membrane also provides a positive seal reducing the exposure of the user to anesthetic gases.

Available in several sizes:

- Small/Large Mice
- Small/Medium/ Large Rats
- Large Rodents/Feline

The picture shows a mouse nose-cone/ mask, connected to an evacuation tubing.

Induction Box

The **7900** Induction Box is a conveniently dimensioned (25x13x13cm), cost-effective solution to confine one guinea pig, one rat or several mice.

It incorporates a sliding lid and tubing connectors (vaporizer input and scavenger output).

A larger size, **7910** is also available**,** dimensioned 44x22x-21cm, for larger animals such as rabbits.

Dual Diverter Manifold with Humidifier

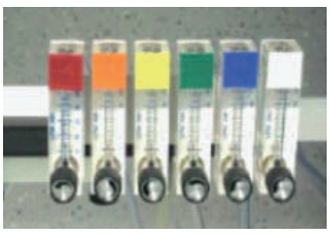
All of the Ugo Basile Gas Anesthesia Systems come with a pre-installed mounting bracket to fit the Dual Diverter Manifold (as shown in the picture).

The anesthetic gas flow can be diverted toward 2 independent devices (i.e., an induction chamber and a breathing mask).

A simple and efficient humidifier is included with the manifold. It is especially recommended for long-term anesthesia, when dehydration may become an issue.

Multiple Delivery System

The Multiple Delivery accessory allows the connection of up to six devices to one anesthesia system for simultaneous operation.



Each device (for 2, 3, 4, 5 or 6 animals) has independent flow regulation.

F/AIR Scavenger

A solution to handling waste anesthetic gases when active evacuation systems are not available, activated charcoal canisters remove approx. 50g of halogenated anesthetic agents from the waste gas stream before being discarded.

Ordering Information

ANESTHESIA SYSTEMS

21050 **Basic Single-Output Anesthesia System** including Digital Flowmeter (for O_2 or Medical Air) and TEC-3 vaporizer for Isoflurane (*)

21100 **Single-Output Anesthesia System**, including 21050 (*), 2 passive scavengers (**), evacuation tubing.

21200 **Double-Output Anesthesia System,** Including 21050 (*), 4 passive scavengers (**), evac. tubing & dual diverter manifold with humidifier

21400 **Multiple-Animal Anesthesia System,** including 21050 (*), 8 passive scavengers (**), evac. tubing and Multiple Delivery System for 4 animals.

21600 **Multiple-Animal Anesthesia System,** including 21050 (*), 12 scavengers (**), evac. tubing and Multiple Delivery System for 6 animals.

Special configurations available on request: ask for details!

ACCESSORIES

Delivery Systems (Masks & Induction Boxes)

PS-0525-A **Nose-Cone/Mask Circuit** for **Small Mice**,

PS-0305-A **Nose-Cone/Mask** for **Large Mice**, 3cm⌀

PS-0306-A **Nose-Cone/Mask** for **Small Rats**, 4.5cm⌀

PS-0307-A **Nose-Cone/Mask, Medium Rats**, 5cm⌀

PS-0308-A **Nose-Cone/Mask** for **Large Rats**, 5.5cm⌀

All masks are complete with diaphragm and inlet connector

7900 **Induction Box** for **small rodents** (rats and mice), dimensioned 25x13x13 (h) cm

7910 **Large Induction Box,** 40x22x21(h)cm

21100-790 **Induction Box** for **small rodents**, airtight model, with latch, 25x13x13 (h) cm

Special Systems with N2O

22100 **O_2/N_2O Anesthesia System, with 2 Analog Flowmeters, TEC-3 vaporizer for Isoflurane (*), passive scavenger (**), evac. tubing.**

** Vaporizers for other anesthetic agents available on request*
*** Activated Charcoal Canisters*

Multiple-Output Delivery Systems

PS-0529-02 **Dual Diverter Manifold** with humidifier, *see complete model **21200***

PS 30-459 **Multiple-Animal Delivery System**, 6 Flowmeters, *see complete model **21600***

Multiple delivery systems for 2, 3, 4, and 5 animals available

Anesthetic Scavenger and Evacuation

PS-0581-00 **F/air filter** (activated charcoal canister)

PS-0581-01 **F/air filter**, pkg. of 8

PS-0582 **Evac.Tubing for F/air**, 1.8 m with 19 mm male x 22 mm female adaptor

21100-833 **Active Scavenger System**, to remove the anesthetic agent by negative pressure (to be be connected to an activated charcoal canister)

Heating Pads and Surgical Tables

21100-800 **Rodent Warmer**, to monitor and maintain animal temperature during surgery: available with mouse, rat or home-cage heating pad; the rectal thermal probe is sold separately.

See leaflet!

PS-0811 **Heating Pads** Delta-Phase Isotherm (pkg of 3), 20x20x0.65 cm. Maintains animal body temperature near 37°C up to several hours. Ideal for NMR.

Other Recommended Accessories

Fill Devices

PS-0950 for Isoflurane

PS-0951 for Sevoflurane

PS-0949 for Halothane

Physical (21100)

Weight	8.5Kg
Dimensions	26(w)x18(d)x24(h)cm
Shipping Weight	12Kg
Packing	67x42x53cm

www.ugobasile.com

Anesthetizing Box

Cat. No. 7900 (rodents) 7910 (rabbits)

General

Our Induction Boxes are conveniently dimensioned induction boxes, featuring a sliding lid. They are made of Perspex and prove to be particularly useful to confine laboratory animals during anesthetizing.

The **7900**, for small rodents, is **dimensioned 25x13x13**(h)cm; the larger model 7910, for rabbits is **dimensioned 40x22x21**(h)cm;

The transparent acrylics permits the animal to be kept under constant observation.

Two tubing connectors of nickel plated brass are fitted into each end, one located at the top of the box and the other at the bottom.

Any (non-explosive!) gas mixture can be used. In case small quantities of liquid, as ether or chloroform are used, soak a cotton wool flock and place it in a small Becker, in-side the box.

For more demanding application, and higher safety, an airtight model, with latch, is also available, see picture below.

Our Induction chambers are ideal to work with our new Anesthesia Systems

TO CONFINE SMALL LABORATORY ANIMALS DURING ANESTHETIZING

Ordering Information

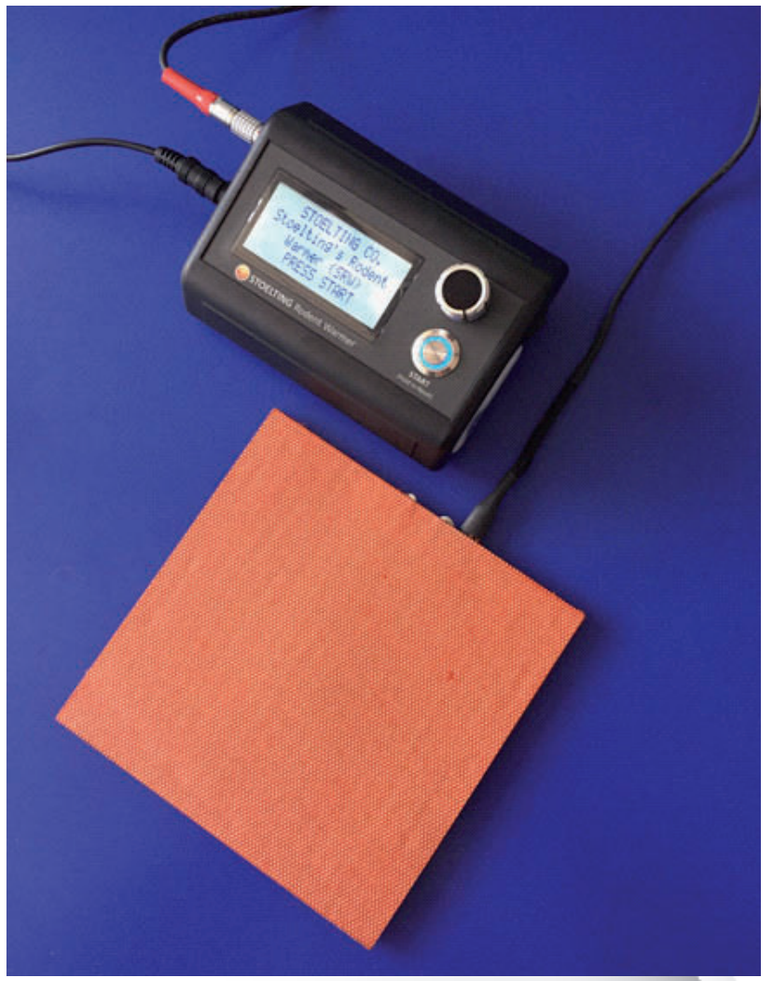
- **7900** Induction box for small rodents 25x13x13(h)cm, ID 23x12x12(h) cm
- **7910** Induction box for rabbits 40x22x21(h)cm, ID 38x20x19(h) cm
- **2100-790** Airtight model, with latch, see picture 25x13x13 (h) cm, ID 21x11x13(h) cm

www.ugobasile.com

Rodent Warmer

by Stoelting

Cat. No. 21100-800



General

Use Rodent Warmer before, during and after surgical procedures to improve surgical outcome and overall longevity.

Monitor and maintain animal temperature with three programmable settings: animal specific, timer or use with thermal probe.

The Rodent Warmer is available with mouse, rat or home-cage heating pad; the rectal thermal probe is sold separately.

The Rodent Warmer is a perfect complement to our line of Ventilators and Anesthesia Systems, as well as our BP Recorder, and Stoelting's Stereotaxic Instruments.

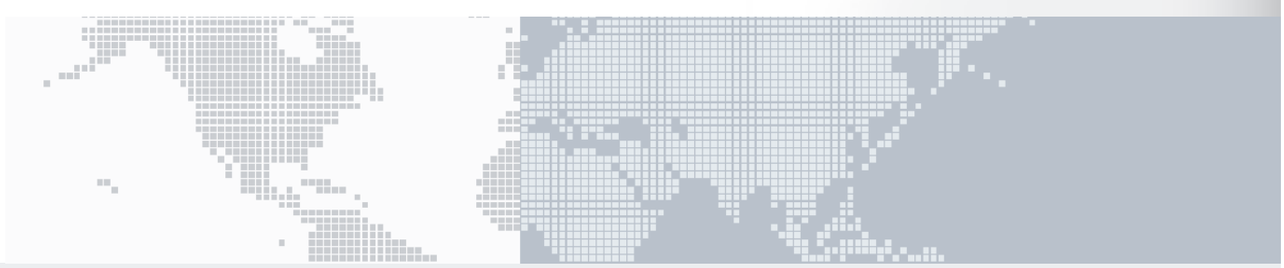
Model X2 is also available, which allows for easy programming and controls 2 independent heating pads simultaneously.

Available with a combination of mouse, rat or home-cage heating pads.

Minimize heat loss and improve surgical outcome with the new rodent warmer!

Compact

for Mice and Rats



Main Features

- Ideal for use with mice and rats
- Easy to use dial control
- Heating Pad Included (mouse, rat, or home cage)
- Preprogrammed Animal Temperatures
- Lightweight, small footprint
- Use with or without rectal probe (*rectal probe sold separately*)

Ugo Basile: more than 10,000 citations

General

The new Rodent Warmer can be used as a general warming system or with a rectal probe (sold separately) for more accurate, core temperature monitoring during pre- and post-op surgical procedures.

Before: Heating pad can be placed underneath an induction chamber to reduce heat loss during anesthetic administration.

During: Place heating pad on a rodent surgery table or stereotaxic instrument to maintain and monitor temperature during surgical procedures, ventilation and anesthesia.

After: Cage heating pads can be placed in the animal's home cage for faster recovery following surgical procedures.

Instrument Description

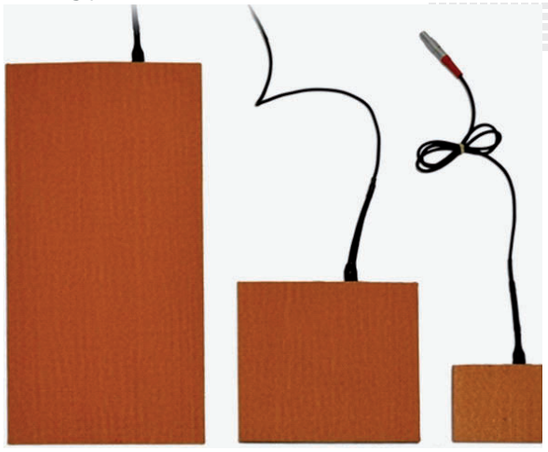
The Rodent Warmer provides three Operating Settings:

1. Select from pre-programmed animal temperatures
2. Countdown Timer
3. Use with Thermal Rectal Probe

All selectable via an easy-to-use dial control.

Heating Pads

Heating pads are available in three different sizes:



Cage	Rat	Mouse
Heating Pad	Heating Pad	Heating Pad
16x38cm	**15.25x15.25cm**	**7x7cm**

Optional

Rodent Warmer X2 is also available, to control 2 independent heating pads simultaneously. Available with a combination of mouse, rat or home-cage heating pads.

Physical

Temperature Control Range	:	25-45°C
Temperature Resolution	:	0.1°C
Heater Blanket Connection	:	4-pin locking DIN
Heater Power	:	24VDC@3A
Max Power Requirements	:	120/240VAC (switchable) 50/60Hz, 75VA
Probe Input Connector	:	Phone jack
Probe Dimensions	:	0.62in/1.6mm tip diam.
Control Box Dimensions	:	12.5(l)x9.5(w)x4(h)cm
Control Box Weight	:	200g

Ordering Information

Rodent Warmer X1

21100-800M	Rodent Warmer with Mouse Heating Pad
21100-800R	Rodent Warmer with Rat Heating Pad
21100-800C	Rodent Warmer with Cage Heating Pad

Rodent Warmer X2

21100-850MM	Rodent Warmer with 2 Mouse Heating Pads
21100-850RR	Rodent Warmer with 2 Rat Heating Pads
21100-850CC	Rodent Warmer with 2 Cage Heating Pad

Accessories:

21100-810	Mouse Heating Pad
21100-812	Rat Heating Pad
21100-814	Cage Heating Pad
21100-304	Rectal Thermal Probe (*)

(*) Rectal Thermal probe always sold separately.

PHARMACOLOGY

PAIN AND INFIAMMATION

MOTORY COORDINATION, GRIP, STRENGTH, ACTIVITY

VENTILATORS AND GAS ANESTHESIA

BEHAVIOUR, CONDITIONING, REWARD

BEHAVIOUR, MAZES, TRACKING

TISSUE BATHS, TRANSDUCERS, RECORDERS

MISCELLANEOUS, ECT, LMD

BLOOD PRESSURE, VITAL FUNCTIONS

METABOLISM, FEEDING BEHAVIOUR

MUROMACHI MICROWAVE FIXATION

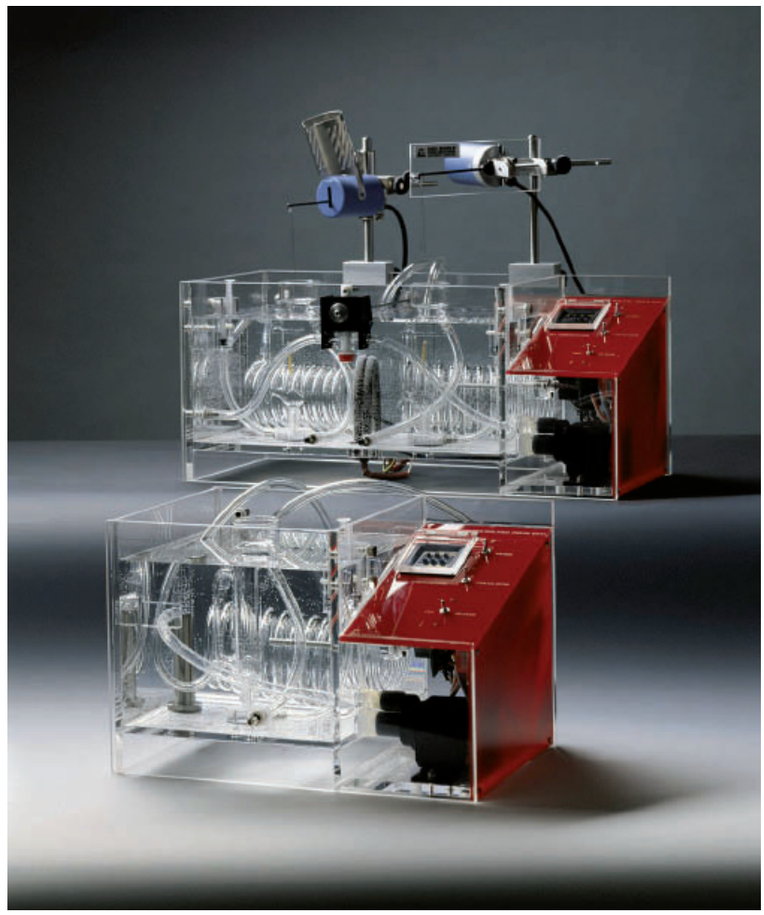
ugo basile®

TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com
sales@ugobasile.com

Isolated Organ Baths

Cat. No. 4000 / 4050 / 4400



General

The Isolated Organ Baths have been designed for accurate recording of isometric or isotonic tissue contraction/release.

Research involving effects of electrical stimuli or drugs on isolated organs, uterus, trachea, vessel strips, auricle, can be performed under optimum conditions.

Wash or test solution enters the chamber after passing through the temperature equilibrating coils and the syringe valve. The tissue in the chamber is washed by flushing the chamber through an overflow drain tube, to avoid exposing the tissue to the air.

Water stirring is accomplished by a water jet delivered by a centrifugal pump.

A 200W stainless steel heating element is mounted on the Perspex tank floor. A precise solid state "proportional" thermostat maintains the temperature within the excellent limits of ±0.1°C on all models.

Note : the Isometric and Isotonic Transducers featured in the picture are not included and can be ordered separately.

SAFETY

EFFICIENCY

4000 One Muscle Chamber

4050 Two Muscle Chambers

4400 Four Muscle Chambers

Main Features

- All components visible through the clear Pespex tank: great for teaching!
- Tissue washing without exposure to air
- Water-jet bath stirring provided by a noiseless vibration-free centrifugal pump
- Easy and quick mounting of tissue

Ugo Basile: more than 10,000 citations

Bath 4000

The 4000 water bath consists of a clear Perspex tank, 19x19x17cm which contains one tissue chamber, one temperature equilibrating coil, one adjustable support rod on which transducers can be fastened to the tank via the holder provided.

Bath 4050

This is similar to the one-chamber bath 4000 but the tank is dimensioned (34x19x17cm) to accomodate two muscle chambers and syringe valves, two coils, two adjustable support rods and holders for transducers.

Bath 4400

The bath 4400 lodges up to 4 preparations; they maintain the features of the 4050 but heating power and dimensions are upgraded accordingly, the tank being 47x29x22cm.

Tissue Chamber Configuration

The tissue chambers provided with porous frit, available in 5, 10, 20, 30 or 50 ml are standard. unless otherwise specified, we supply our tissue baths with 10ml muscle chambers.

An accurately positioned glass hook is provided in the chamber to which the thread loop can be easily attached, ensuring the organ being well centered in the chamber.

Tissue chambers are also available provided with an aeration side arm in 20, 30 or 50 ml volume. Tissue chambers without hook are available on request.

Control Box

The control section of the bath lodges the electronics; the temperature regulator, the temperature sensor & the circulation motor are connected to by connectors enabling quick disconnection for servicing purposes.

The upper panel consolidates all commands and the temperature regulator, with keys to preset water temperature in the range 25-45°C, enabling an accurate temperature setting in 0.1°C steps.

Recording & Transducers

Ugo Basile offers a complete line of Transducers (Isometric 7003, 7004, 7005, 7010 or Isotonic 7006) and a versatile 4-channel digital recorder, **DataCapsule-*Evo***. **Ask for details!**

Ordering Information

4000 **Isolated Organ Bath, One Muscle Chamber**, with circulation pump, heater, thermostat, temperature sensor, complete provided with following standard accessories:

4005 Temperature Equilibrating Coil

4100 Muscle Chamber, 10ml, provided with porous frit and hook

14110 Lead-Screw Positioner for 10 & 13mm rods

4004 Supporting Rod (10mm diam.)

4000-302 Instruction Manual

E-WP 008 Mains Cord

4050 **Isolated Organ Bath, 2 Muscle Chambers**, as above but all standard accessories multiplied by two, i.e., 2x4005, 2x4100, etc.

4400 **Isolated Organ Bath, 4 Muscle Chambers**, as above but all standard accessories multiplied by four, i.e., 4x4005, 4x4100, etc.

Physical:

4000	Dimensions	: 32x20x22cm
	Weight	: 4Kg
	Shipping Weight	: 10.5Kg
	Packing	: 67x42x53cm
4050	Dimensions	: 47x20x22cm
	Weight	: 6.5Kg
	Shipping Weight	: 11.5Kg
	Packing	: 80x60x44cm
4400	Dimensions	: 47x29x22cm
	Weight	: 9Kg
	Shipping Weight	: 16.5Kg
	Packing	: 680x60x44cm

Power Requirement:

115 or 230V, 50-60Hz
250VA max. for 4000/4050, 400VA max. for 4400

Bibliography

- N. Bektas et alia: "**Effect of phenolic acids on functions of rat aorta, vas deferens and on metabolic changes in streptozotocin-induced diabetes**" Indian J.Pharmacol. 44 (2): 184-188, 2012
- A. Rizzo et alia: "**In vitro effects of L-arginine on spontaneous and Homocysteine-induced contractility of pregnant canine uteris**" Theriogenology 76 (4): 715-720, 2011
- E. N. Gorbatova et alia: "**In Vitro Effects of Pentifin on Some Neurotransmitter Systems in the Brain**" Bull. Exper. Biology & Medicine136 (2): 174-175, 2003
- G. Re et alia: "**Identification of Functional α-Adrenoceptor Subtypes in the Bovine Female Genital Tract During Different Phases of the Oestrous Cycle**" Vet. es. Communications 26 3): 479-494, 2002

ugo basile
TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com

Multiplexing Pulse Booster

Cat. No. 3165

General

The 3165 Multiplexing Pulse Booster is a useful complement to any stimulator, delivering up to 800mA of constant current to up to four in-vitro preparations (e.g., smooth muscles) at the same time.

The Multiplexing Pulse Booster has been designed to obviate the inconveniences connected to the use of single-channel stimulators, that lack the independent output connections and the individual adjustment capability to deliver pulses of preset intensity to more than one preparation.

It is especially useful when "field electrodes" and other low impedance stimulation arrangements are used.

Bear in mind that the one-channel stimulator can be conveniently replaced by a data acquisition system, as our **17304 DataCapsule-Evo**!

Four in-vitro preparations can be driven by a single one-channel stimulator

Main Features

- High Power constant current: up to 800 mA
- Independent Isolated Circuits to eliminate interference
- Unipolar or Bipolar Mode
- Adequate Voltage (45V) enabling stimulation by field electrodes of most in-vitro preparations
- Continuous Monitoring of the preset current flowing through each preparation

Instrument Description

The 3165 features:

- High Power, digitally adjustable constant current: up to 800 mA
- Adequate Voltage (45V) which enables stimulation by field electrodes of most in-vitro preparations described in the literature
- Unipolar or Bipolar Mode
- Independent Isolated Circuits to eliminate interference
- Continuous Monitoring of the preset current flowing through each preparation

The current level of each channel is set via its individual 3-digit thumb-wheel switch.

The current output is adjustable in each channel to equal or different levels in the range 0-799mA in 1mA steps.

These current levels are independent of the Stimulator output voltage.

The pulse mode, either unipolar or bipolar, can be selected on one or more channels.

Optional Timer

An optional **Timer (Cat. 3175)** can be supplied, housed in its individual mini-box, to enable the Pulse Booster to deliver pulse trains, when the Stimulator lacks this feature.

This timer is provided with both train and pause-between-trains duration adjustments. Both adjustment time-scales span the interval 0-999 seconds in 1 second steps.

A standard field electrode pair (Cat. 3160) can be supplied. Special electrodes can be designed and manufactured on request.

Please ask for details!

Connection to Digital Recorder

A one-channel stimulator can be conveniently replaced by a data acquisition system, as - for example - our **DataCapsule-Evo**!

Ordering Information

3165	**MULTIPLEXING PULSE BOOSTER**, complete
3165-302	Instruction Manual
E-PE 015	Connection Cable
E-WP 008	Power Cord

Optional

3175	Timer for 3165

PHYSICAL

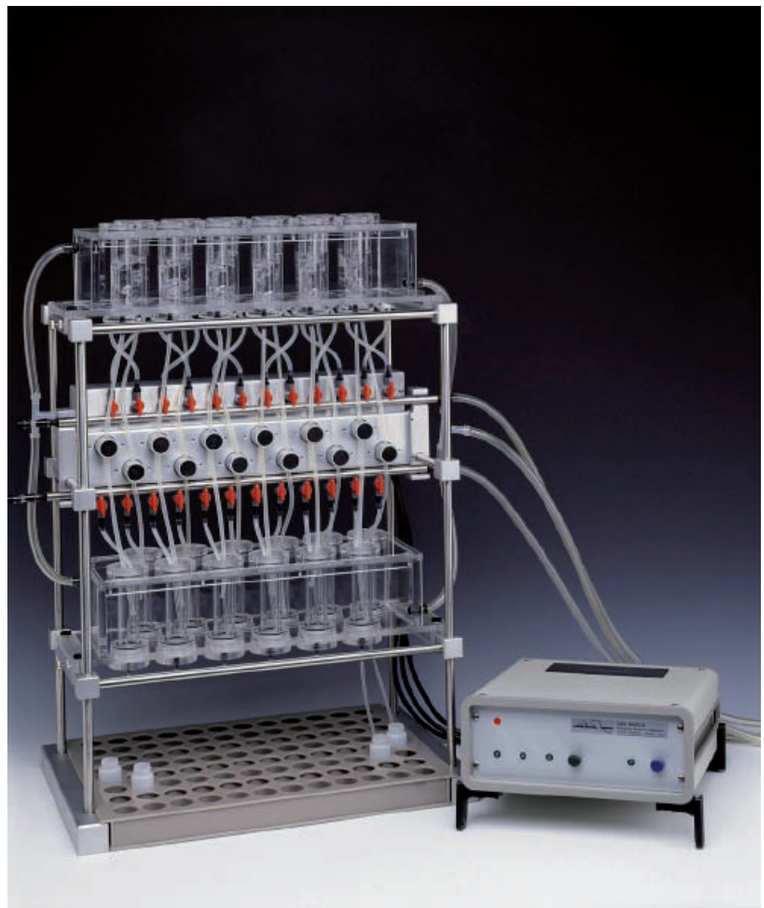
Power Requirement	115/230 V, 50/60 Hz, 30W
Dimensions	26(w)x30(d)x12(h
Weight	4.4Kg
Shipping Weight	6.5Kg approx.
Packing	46x38x27cm

Bibliography

- D. Currò: "**Voltage-gated calcium channels involved in the inhibitory motor responses and vasoactive intestinal polypeptide release in the rat gastric fundus**" Eur. J. Pharmacol. 628: 207-213, 2010
- F. Guagnini et alia: "**Tolerance to cannabinoid response on the myenteric plexus of guinea-pig ileum and human small intestinal strips**" Br. J. Pharmacol. 148, 1165–1173, 2006
- F. Borrelli et alia: "**Effect of Boswellia serrata on intestinal motility in rodents: inhibition of diarrhoea without constipation**" B. J. Pharmacol. 148, 553–560, 2006
- M.G. Matera et alia: "**Immune Sensitization of Equine Bronchus: Glutathione, IL-1 β Expression and Tissue Responsiveness**" Respir. Res. 6 (1): 104, 2005
- S. Tambaro et alia: "**Evaluation of Tamsulosin and Alfuzosin Activity in the Rat Vas Deferens: Relevance to Ejaculation Delays**" J. Pharmacol. Exper. Therap. 312: 710-717, 2005
- S. Ruiu et alia: "**Synthesis and Characterization of NESS 0327: a Novel Putative Antagonist of the CB1 Cannabinoid Receptor"** J. Pharmacol Exper. Therap., 2003
- D. Licheri et alia: "**Long-Term Voluntary Ethanol Consumption Induces Impairment of the Mechanical Performance in the Papillary Muscle of Sardinian Alcohol-Preferring Rats**" Alcohol and Alcoholism 36 (1): 44-47, 2001

Superfusion System

Cat. No. 14900



General

Neurotransmitter release is the major step of neurotransmission. Abnormalities in neurotransmitter release have been proposed to be involved in many pathological conditions.

Therefore, understanding the physiological mechanisms of transmitter release and how the process can be modified by pathological states is essential to develop therapeutically useful pharmacological agents.

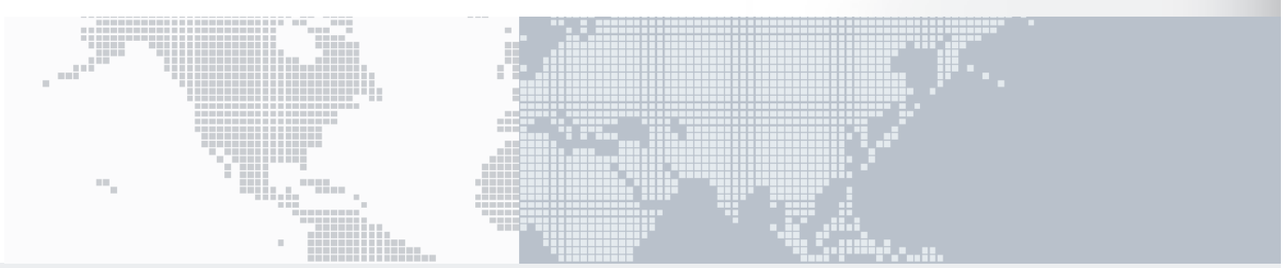
UGO BASILE 14900 Superfusion System has been especially designed to perform release studies from synaptosomes, although brain slices can be employed as well.

On the other hand, presynaptic nerve terminals are the sites where release specifically occurs; therefore superfusion of synaptosomes is best suited to explore presynaptic events.

Superfused synaptosomes are the preparation of choice to study release-regulating presynaptic receptors and to explore the intimate mechanisms of neurotransmitter release.

RAITERI'S METHOD

Synaptosomes Release Studies



Main Features

- Specifically designed to perform release studies from synaptosomes
- Brain slices can be employed as well
- More than 300 full papers using superfused synaptosomes have been published

Ugo Basile: more than 10,000 citations

Introduction

UGO BASILE **14900 Superfusion System is a semi-automated version of that originally developed in Raiteri's laboratory**, where about 200 papers have been published exploiting the technique.

We have developed this Superfusion System in order to make commercially available an instrument in which the original design of the superfusion chambers has remained intact.

The 14900 Superfusion System consists of 12 parallel open superfusion chambers with 12 upper reservoirs, all thermoregulated by a water-jacket. Prewarmed oxygenated media of the desired composition can be concomitantly delivered from the reservoirs to the superfusion chambers.

Synaptosomes are accomodated as very thin layers on microporous filters placed on glass filter supports.

Superfusion is provided by a multi-channel peristaltic pump and superfusate samples are directly collected into scintillation vials.

Ordering Information

14900	**SUPERFUSION SYSTEM (Raiteri's method)**, standard package, including:-
14900-001	Electronic Unit
14900-002	Superfusion Bath Complete Assembly, including upper & lower chambers, valves, set of tubes, etc.
14900-004	Suction Pump
14900-302	Instruction Manual
14900-328	Set of Phials
14900-338	Set of Filters
14900-325	Phial Rack
14900-302	Drain Pan
E-WP008	Mains Cord

Optional:

14900-003	Water Circulator/Heater
14900-015	Masterflex Peristaltic Pump, 12 channels, expandable
14900-024	Masterflex Peristaltic Pump, 24 channels

Physical

Weight	34Kg (complete assembly)
Shipping Weight	48Kg
Dimensions	14900-001: 38(w)x30(d)x13(h)cm 14900-002: 46(w)x28(d)x60(h)cm
Packing	1 box 80x60x44cm 1 box 62x65x84
Power Requirement	115 or 230V, 50/60Hz, 100W max.

Bibliography

Method Paper:

- M. Raiteri, F. Angelini, G. Levi: "**A simple apparatus for studying the release of neurotransmitters from synaptosomes**" Eur. J. Pharmacol. 25: 411-414, 1974

Papers quoting 14900:

- A. Pittaluga et alia: "E**ffects of the neoclerodane Hardwickiic acid on the presynaptic opioid receptors which modulate noradrenaline and dopamine release in mouse central nervous system**" Neurochemistry Intl. 62 (4): 354-359, 2013
- S. Zucchini et alia: "I**ncreased excitability in tat-transgenic mice: Role of tat in HIV-related neurological disorders**" Neurobiology of Disease: available onlyne 2013
- F. Giribaldi et alia: "**Group I metabotropic glutamate autoreceptors induce abnormal glutamate exocytosis in a mouse model of amyotrophic lateral sclerosis**" Neuropharmacology 66: 253-263, 2013
- J. Marrocco et alia: "**Anxiety-Like Behavior of Prenatally Stressed Rats Is Associated with a Selective Reduction of Glutamate Release in the Ventral Hippocampus**" J. neuroscience 32 (48): 17143-17154, 2012
- C. Romei et alia: "**The GABAB receptor antagonists CGP35348 and CGP52432 inhibit glycine exocytosis: Study with GABAB1- and GABAB2-deficient mice**" Pharmacological Res. 61: 547-552, 2010
- M. Grilli et alia: "Specific Inhibitory Effect of Amyloid-β on Presynaptic Muscarinic Receptor Subtypes Modulating Neurotransmitter Release in the Rat Nucleus Accumbens" Neuroscience 167: 482-489, 2010
- G. Bonanno et alia: "**Release of [3H]D-aspartate induced by K+-stimulation is increased in the cervical spinal cord of the wobbler mouse: a model of motor neuron disease**" Neurochemistry Intl. 55: 302-306, 2009
- M. Grilli et alia: " **Release-enhancing pre-synaptic muscarinic and nicotinic receptors co-exist and interact on dopaminergic nerve endings of rat nucleus accumbens**" J. Neurochemistry 105 (6): 2205-2213, 2008

In addition, more than 300 full papers using superfused synaptosomes have been published

ugo basile
TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com

Isometric Transducers

Cat. No. 7003 / 7004 / 7005 & 7010

The picture shows an **Isometric** Transducer (right) & an **Isotonic** Transducer (left), see separate datasheet

General

The three models 7003-7004-7005 cover the range from 0 to 50 g (see table on the facing page). The high sensitivity 7010 is designed for the mg range.

The force exerted on a hollow carbon fibre beam is converted into proportional electric signal via strain-gauges, conveniently wired in Wheatstone bridge circuit.

Model Selection

Ugo Basile transducers are of robust construction and can withstand forces of up to 5-10 times the rated value.

It is possible to use 7003 which is generally used for trachea rings or artery strips, where forces of 5-10 grams are involved, by operating at minimum amplifier sensitivity; however, the cantilever will deflect with a load of the mentioned magnitude

Generally speaking, it is advisable to use a stiff transducer, operating at high amplifier sensitivity, and use the most sensitive transducer only when

Also available from Ugo Basile:

- Tissue Baths, 1, 2, 4-chambers
- Digital Recorder DataCapsule-*Evo*
- Electrodes & Stimulators

Main Features

- Ugo Basile transducers have been designed for precise measurement of force in muscular preparations under isometric conditions
- An Isometric Transducer measures changes in force at constant length whereas an Isotonic Transducer is basically a displacement meter under constant load

Ugo Basile: more than 10,000 citations

Isometric Transducer Specifications

Model	7010	7003	7004	7005
Electrical				
Excitation Voltage (max.)	6V	6V	6V	6V
Excitation Voltage (typical)	3V	3V	3V	3V
Sensitivity (μV per g per V)	110	70	25	10
Non linearity & Hysteresis	+/-3%	+/-3%	+/-3%	+/-3%
Mechanical				
Force Range	**0-800 mg**	**0-2g**	**0-10g**	**0-50g**
Overload Rating	5g	20g	50g	200g
Moment of Inertia	7gcm^2	7gcm^2	7gcm^2	7gcm^2
Lever Arm Displacement	0.5 mm/g	0.3 mm/g	0.1 mm/g	0.06 mm/g
Physical				
Weight	270g	270g	270g	270g
Shipping Weight	900g	900g	900g	900g
Packing	29x26x29cm			

Compatibility

Before ordering, check the connection compatibility of your amplifier/recording system.

The Isometric & Isotonic Transducers are normally supplied with a connector designed for Ugo Basile Data-Capsule-Evo Recorder (see datasheet).

If the customer wishes to make use of other recording apparatus, the transducers can be supplied with appropriate connectors on request: we will be glad to provide transducer with different connectors, if available, or to provide wiring information and instruction.

Ordering Information

7003 Isometric Force Transducer , type DY1

7004 Isometric Force Transducer , type DY2

7005 Isometric Force Transducer , type DY3

7010 High-Sensitivity Transducer , type DY0

Bibliography

Isometric Transducers 7003, 7004, 7005

- H. Ellers et alia: "**Pungent General Anesthetics Activate Transient Receptor Potential-A1 to Produce Hyperalgesia and Neurogenic Bronchoconstriction**" Anesthesiology 112: 1452– 63, 2010
- A. Rizzo et alia: "**Effects of rosiglitazone, a PPAR-c agonist, on the contractility of bovine uterus in vitro**" J. vet. Pharmacol. Therap. 32, 548–551, 2009
- L. Natale et alia: **"Interleukins 1 Beta and 6 Induce Functional Alteration of Rat Colonic Motility: An In Vitro Study**" Eur. J. Clin. Investigation 33 (8): 704-712, 2003
- D. Mitolo-Chieppa et alia: "I**nvolvement of κ-Opioid Receptors in Peripheral Response to Nerve Stimulation in κ-Opioid Receptor Knockout Mice**" Autonomic & Autacoid Pharmacology 22:4: 233-239, 2002
- M.R. Accomazzo et alia: "**Leukotriene D4-Induced Activation of Smooth-Muscle Cells From Human Bronchi Is Partly Ca2+-Independent** " Am. J. Respir. Crit. Care Med. 163:1: 266-272, 2001
- M. Shalev et alia: "**Stimulation of P2y Purinoceptos Induces, Via Nitric Oxide Production, endothelium-Dependent Relaxation of Human isolated Corpus Cavernosum**" J. Urol. 161: 955-959, 1999
- M.C Breschi et alia: "**Effects of Noise Stress on EFS-Mediated Cholinergic and Inhibitory NANC Responses in Tracheae from Normal and Sensitized Guinea-Pigs**" J. Autonomic Pharmacol. 17:6: 353-363, 1997
- M.K. Sim et alia: "**Presence of an Endothelial Esterase in the Rat Aorta: Effects on the Actions of Ester and Non-Ester Muscarinic Antagonists"** Endothelium 1: 109-114, 1993

High-Sensitivity Transducer 7010

- L.W. Tait et alia: "**Hagfish natriuretic peptide changes urine flow rates and vascular tensions in a hagfish**" Comparative Biochemistry and Physiology C (150) 45,-49, 2010
- G. Froldi et alia et alia: "**Activity ofsapfrom Croton lechleri on ratvascularand gastric smoothmuscles**" Phytomedicine 16: 768-775, 2009

www.ugobasile.com

Isotonic Transducer

Cat. No. 7006

The picture shows an **Isotonic** Transducer (left) & an **Isometric** Transducer (right), see separate datasheet

General

The 7006 Isotonic Transducer basically consists of a carbonfibre lever arm which pivots on the shaft of a Hall-effect rotary motion transducer of original design.

The arm is balanced by an adjustable counter-weight of tungsten alloy.

It is possible to carry out experiments on extremely small muscle fibres, which can be held under a tension of as little as 100-200 mg so that minimal force and consequent displacement alterations can be recorded.

The lever arm balancing is provided by a tungsten alloy counterweight which can be shifted by turning its knurled section.

This load is monitored by the counterweight rim moving along a scale calibrated in grams.

Also available from Ugo Basile:

- Tissue Baths, 1, 2, 4-chambers
- Digital Recorder DataCapsule-*Evo*
- Electrodes & Stimulators

Main Features

- Ugo Basile Isotonic Transducer is specially designed for investigating isotonic contractions in isolated organs, particularly smooth muscle, amphibian hearts, etc.
- An Isotonic Transducer is basically a displacement meter under constant load, whereas an Isometric transducer measures changes in force at constant length

Ugo Basile: more than 10,000 citations

Isotonic Transducer Specifications

Voltage Output	300µV per mm displacement of lever arm tip
Linearity	± 2% to ± 15 ° rotation
Excitation Voltage	6 ÷ 15V
Excitation Current	20mA (constant in the range 6 ÷ 15V)
Operating Range	± 15° about the centre
Lever Arm Length	10cm
Lever Arm Travel	6cm
Breakaway Torque	less than 0.1g x cm
Moment of Inertia	35 g x cm²
Overall Dimensions	16.5x5.5x11cm (excl. removable handle)
Weight	0.35Kg
Shipping Weight	1.60Kg
Packing	29x26x29cm

Compatibility

Before ordering, check the connection compatibility of your amplifier/recording system.

The Isometric & Isotonic Transducers are normally supplied with a connector designed for Ugo Basile Data-Capsule-Evo Recorder (see datasheet).

If the customer wishes to make use of other recording apparatus, the transducers can be supplied with appropriate connectors on request: we will be glad to provide transducer with different connectors, if available, or to provide wiring information and instruction.

Ordering Information

7006 **Isotonic Transducer**

Bibliography

- O. E. Kiroglu alia: "**EThe effects of thiol modulators on nitrergic nerve- and S-nitrosothiols-induced relaxation in duodenum**" J. of Basic and Clinical Physiol. & Pharmacol. 0 (0): 1-8, 2013
- M. Bucci et alia: "**Cross-talk between toll-like receptor 4 (TLR4) and proteinase-activated receptor 2 (PAR2) is involved in vascular function**" Br. J. Pharmacol. 168 (2): 411-420, 2013
- C. Jelen et alia: "**Bone scaffolds with homogeneous and discrete gradient mechanical properties**" Materials Science & Engineering: C 33 (1): 28-36, 2013
- M. Volta et alia: "**Pharmacological profile and antiparkinsonian properties of the novel nociceptin/orphanin FQ receptor antagonist 1-[1-cyclooctylmethyl-5-(1-hydroxy-1-methyl-ethyl)-1,2,3,6-tetrahydropyridin-4-yl]-3-ethyl-1,3-dihydro-benzoimidazol-2-one (GF-4)**" Peptides 31:1194–1204, 2010
- P.U. Ertug: "**Protective effect of quercetin, a polyphenolic compound, on mouse corpus cavernosum**" Fundamental & Clinical Pharmacology 24: 223–232, 2010
- O. Desire et alia: "**Antispasmodic and antioxidant activities of fractions and bioactive constituent davidigenin isolated from *Mascarenhasia arborescens***" J. Ethnopharmacology. J. Pharmacol. Accepted: May 2010, 2004
- D. Currò et alia: "**EVoltage-gated calcium channels involved in the inhibitory motor responses and asoactive intestinal polypeptide release in the rat gastric fundus**" Eur. J. Pharmacol. 628: 207-213, 2010
- C. Belloli et alia: "**Adrenergic Regulation of Vascular Smooth Muscle Tone in Calf Digital Artery"** J. Vet. Pharmacol. Therap. 27:4: 247-254, 2004
- F. Carpi et alia: "**Electromechanical Characterisation of Dielectric Elastomer Planar Actuators: Comparative Evaluation of Different Electrode materials and Different Counterloads** " Sensors and Actuators. 107: 85-95, 2003
- P. Tucci et alia: "**Cyclo-Oxygenase- and Capsaicin-Sensitive Afferent Fibres Affect Beta-Adrenoceptor-Evoked Response in the Rat Urinary Bladder"** Pharmacology 64: 57-62, 2002
- P.C. Moser et alia: "**SL65.0155, A Novel 5-Hydroxytryptamine4 Receptor Partial Agonist with Potent Cognition-Enhancing Properties"** J. Pharmacol. Exper. Therap. 302:2: 731-741, 2002
- P. Tucci et alia: "**Effects of Natural Tachykinins on Ovine Lower Urinary Tract Smooth Muscle**" J. Autonomic Pharmacol. 21:2: 79-84, 2001
- C.M.Q. Jesus-Morais et alia: "**Yangambin, a Lignan Obtained from Ocotea duckei, Differentiates Putative PAF Receptor Subtypes in the Gastrointestinal Tract of Rats**" Planta Med. 66:4: 211-216, 2000

www.ugobasile.com

DataCapsule-*Evo* Digital Recorder

Cat. No. 17308

NEW

General

The new DataCapsule-*Evo 17308*, powered by iWorx, is a new general purpose, 8-channel data acquisition system that provides high resolution and sensitivity over conventional recorders.

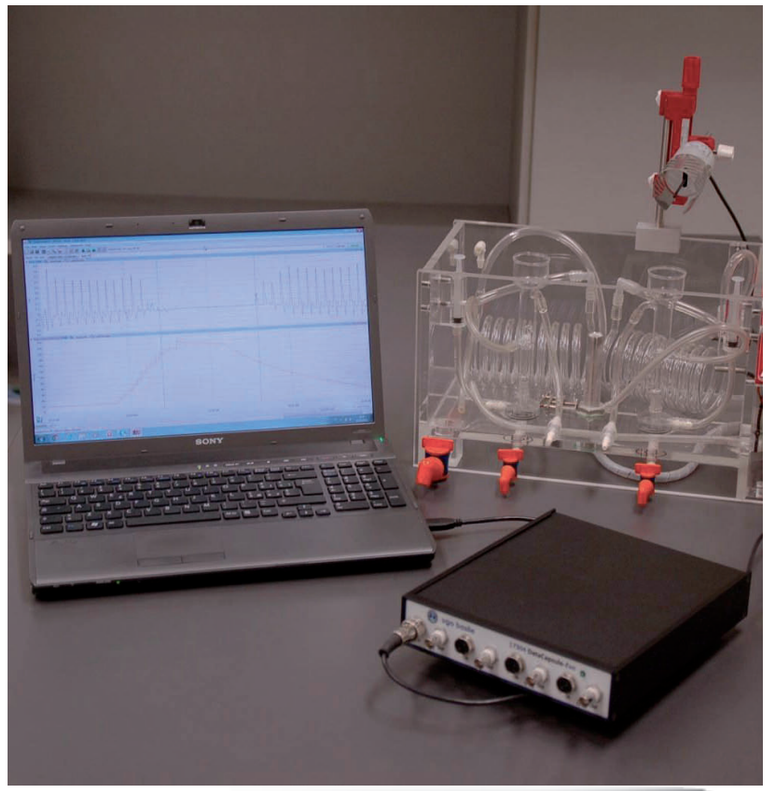
It is an advanced and feature-rich physiological data acquisition system; it comes standard with eight general purpose input channels, a low voltage and high voltage stimulator, eight digital inputs and outputs, a built-in barometric pressure sensor, and four iWire™ inputs.

The 17308 exhibits the high resolution, low noise, and flexibility required for a variety of research applications.

Set-up is plug-and play easy, with connection to PC or MAC computers via USB interface; incorporating innovative iWire serial interface technology and advanced LabScribe data acquisition and analysis software, the 17308 Recorder accommodates a wide range of sensors, transducers, and other devices.

The 17308 feature a high resolution, 16-bit ADC, with exceptionally low system noise ~ 1mV.

LabScribe3™ software is provided with the instrument, or can be downloaded from our web site.



LabScribe3™ Software on-board

100KHz Sampling Speed

4+4 CHANNEL DATA ACQUISITION SYSTEM

with iWire Interface (4 additional channels)

Main Features

- USB connection to PC and MAC
- Connectors for most transducers
- DIN & BNC inputs and BNC outputs
- Input trigger to start recording
- High resolution and sensitivity
- Dual Programmable stimulator iWire interface

Ugo Basile: more than 10,000 citations

Connections and Specifications

Four Channels are equipped with a BNC connector for single-ended transducers. Four channels are equipped with a transducer amplifier, to allow connection to virtually any physiological transducer via a DIN8 connector.

The Maximum sampling speed is 100k samples per second aggregate.

iWire Connectors accept up to four serial iWire interfaces including the iWire-B3G, iWire-BIO4, iWire-BIO8, and iWire-ECG12. The iWire-B3G interface can record up to four channels of data. Three of the channels are isolated biopotential amplifiers capable of recording ECGs, EMGs, EOGs, EGGs, and EEGs, while the fourth is a dedicated GSR amplifier (used with the C-ISO-GSR sensor). The iWire-BIO4 and iWire-BIO8 include four or eight biopotential amplifiers respectively.

EM1 and EM2 accept the Event Marker (EM-220).

Each channel of the 17308 is equipped with dual, low voltage, independently programmable 16-bit +/- 15V stimulators.

Parameters for the stimulators, such as pulse width, frequency & amplitude, may be changed on the fly, using controls located in the LabScribe software toolbar.

Standard protocols include Pulse, Train, Step, Triangle, Ramp, and Custom. Connected via BNC connectors.

Software and Data Management

The DataCapsule-*Evo* setup is plug-and-play easy with connection to PC or MAC computers via USB interface.

Recorded data are managed by the versatile **LabScribe3 Software**, featuring optimized scaling of displayed data: time base or y-axis scaling can also be zoomed in or out with a single click of the mouse.

Keyboard input from the user may be time locked to the data; annotations may be positioned in the data, just as you would write on chart paper!

Twenty-four off-line calculations are also supported, including Max-Min, Slope at a Point, and Mean.

Any view of the data can be exported to the disk as a text file or graphic.

This capability is ideal for post calculation in programs like Excel™ or MatLab™; data from any window in the program can always be printed.

DataCapsule-*Evo* Specifications

BNC Inputs (A1-A4)

Number of Inputs	4
Input Range	±10 VDC
Resolution	16 bit
Connectors	BNC Cable

DIN8 Transducer Inputs (A5-A8)

Number of Inputs	4
Input Range	±10 VDC
Resolution	16 bit
Isolation	No
Excitation	±5 VDC, 100 mA
Connectors	DIN8
Gain	Programmable with input resistor

High Voltage Stimulator Output

Connectors	HV Safety
Output Range	0-1mA
Compliance	100V
Max ON time	10ms

Low Voltage Stimulator Outputs (S1-and S2)

Resolution	16bit
Connectors	BNC
Output Range	±15 VDC at 35 mA
Modes	Pulse, Train, Constant, Step, Ramp, Triangle, Custom

Digital Inputs and Outputs

Input	8 independent lines, TTL input, 1 Mega Ohm input impedance, 5V maximum
Output	8 independent lines, TTL output level, 24 mA maximum load per line

A/D Converter

Sampling Speed	100KHz aggregate
Interface	USB 1.1, 2.0, full speed

Physical

Power	12VDC, 1.5A
Dimensions	23cm(W) x 15cm(D) x 6.5cm(H)
Shipping Dimensions	45 (D) x 34 x 26 (h) cm
Weight	2.0 Kg
Shipping Weight	4.0 Kg
Software	iWorx LabScribe3™
Warranty	The 17308 hardware is protected with a 24-month warranty

Ordering Information

17308 **DataCapsule-*Evo* Digital Recorder,** standard package, including LabScribe3™ Software

Transducers

The DataCapsule can be connected to a variety of transducers.

Among the ones offered by Ugo Basile:

7003-G	Isometric Force Transducer, type DY1
7004-G	Isometric Force Transducer, type DY2
7005-G	Isometric Force Transducer, type DY3
7010-G	High Sensitivity Transducer, type DY0
7006-G	Isotonic Transducer
17844-G	Pressure Transducer

www.ugobasile.com

ECT Unit

Cat. No. 57800

General

The ECT apparatus is specially designed for neurochemical and neuropharmacological research.

A constant current output is used, which ensures reproducible results and accurate determination of the EC threshold while also pinpointing any variations in the threshold, brought about by drugs having a specific action on the cortex and subcortical regions.

The shock parameters have been selected after consulting the most recent literature, to supply the most suitable range when operating with mice and rats.

Consistent reproducible current levels are produced by feedback circuitry that adjust for variance in impedance of the contact from animal to animal.

The Electroconvulsive Device is supplied with auricular (ear lobe) electrodes.

DESIGNED FOR INDUCING CONVULSIONS IN RESEARCH ANIMALS

FOR NEUROCHEMICAL & NEUROPHARMACOLOGICAL RESEARCH

Particularly useful for:-

- General screening of potentially neurotropic substances
- Evaluating the depressant or stimulating action of drugs on the CNS
- Endocrinological investigations on the relationship between the nervous system and the hypophysis

Ugo Basile: more than 10,000 citations

ECT UNIT

No. 57800

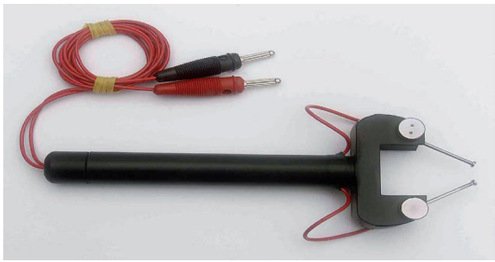
General

Consistent reproducible current levels are produced by feedback circuitry that adjust for variance in impedance of the contact from animal to animal.

The impedance of the animal can be previously measured and displayed, and a warning signal flashes if the impedance is too great to deliver the desired current level.

The special output circuit enables any type of electrode to be used.

The **auricular electrodes 57800-002**, supplied with the standard package, allow a single operator to deliver shock to a number of animals in a short time.



The above picture features **Corneal Electrodes Cat. 57800-003**, which can be provided as **optional**.

Different types of electrodes can be manufactured on request.

Specifications

Rectangular Positive Pulse :	by H.V. transformer
Constant Current :	controlled by a feedback network
Pulse Rise&Fall Time :	20µs
Pulse Width (ms) :	0.1 to 0.9 in 0.1ms steps ±1%
Frequency (pulses/s) :	1-299 in 1 pulse/s steps ±1%
Shock Duration :	0.1 to 9.9 in 0.1s steps ±1%
Pulse Voltage :	2.5KV max.
Current Range :	0-99mA in 1mA steps ±2%
Output Resistance :	min 0Ohm - max. 25KOhm (at max. current)
KOhm Display :	0-199 KOhm - 1KOhm resolution
Power Requirements :	115/230V - 50/60Hz - 70VA

WARNING: due to HIGH VOLTAGE involved, the operator should always wear rubber gloves when handling the electrodes.

Bipolar Inverter 57800-010

An optional Biphasic Unit may be placed between the animal and the Electroconvulsive Device to invert every second pulse. Maximum frequency in this case becomes 100 Hz.

ECT Monitor 57800-015

When connection to an oscilloscope or data acquisition system, this useful accessory is required to guarantee a simple and safe way to monitor the ECT output.

The risk of damage to the ECT Unit due to accidental wrong connections is avoided when using the ECT Monitor.

Ordering Information

57800	**ECT Unit**, standard package including:
57800-001	Pulse Generator
57800-002	Set of Auricular Electrodes
57800-302	Instruction Manual (on USB pen drive)
E-WP 008	**Mains Cord**

Accessories and Spares

57800-003	Set of Corneal Electrodes
57800-320	Set of 4 Felt Pads for Auricular Electrodes
57800-010	Bipolar Inverter
57800-015	ECT Monitor

Physical

Instrument Size	27(W)x37(D)x13(H)cm
Weight	3.4Kg
Packing	45x34x26cm
Shipping Weight	5Kg

Bibliography

- M. Svensson et alia: "**Effect of Electroconvulsive Seizures on Cognitive Flexibility**" Hippocampus 26(7): 899-910, **2016**
- J. Coppens et alia: "**Anticonvulsant Effect of a ghrelIn Receptor Agonist in 6Hz Corneally Kindled Mice**" Epilepsia 57(9): e195-e199, **2016**
- F. Tomaciello et alia: "**Resveratrol Lacks Protective Activity Against Acute Seizures in Mouse Models**" Neuroscience Letters 632: 199-203, **2016** (*6Hz model*)
- R.J. Schloesser et alia: "**Antidepressant-like Effects of Electroconvulsive Seizures Require Adult Neurogenesis in a Neuroendocrine Model of Depression**" Brain Stimulation 8(5): 862–867, **2015**
- A. Kretschmann et alia: "**Different MicroRNA Profiles in Chronic Epilepsy Versus Acute Seizure Mouse Models**" J. Molecular Neurosc. 55(2): 466-479, **2015**
- L. Walrave et alia: "**Validation of the 6Hz Refractory Seizure Mouse Model for Intracerebroventricularly Administered Compounds**" Epilepsy Res. 115: 67-72, **2015** (*6Hz model*)

www.ugobasile.com

Lesion Making Device

Cat. No. 53500

General

This compact, **solid state DC Lesion Maker** has been designed for the production of localized lesions in small animals, when direct current (DC) is preferred to RF.

If features a regulated power supply combined with a constant DC current generator which operates on either continuous or timed mode.

The Lesion Making Device provides constant DC current in mA from 10 µA to 99 mA. The pulse duration may be timed by the instrument between 1 and 99 seconds, or manually controlled.

The current generator is protected against short circuit, preventing the electronics to get damaged due to the electrodes coming accidentally in contact with each other.

Particular emphasis has been placed in the design of a good circuit output/ground insulation; this feature also minimizes spurious current field lines across the tissue, outside the pattern preset by the operator.

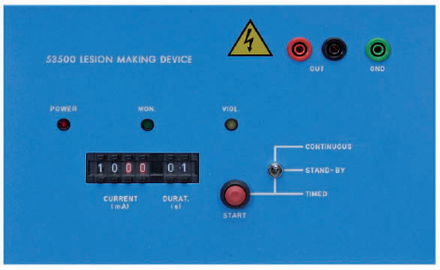
New Model!

A precision instrument, which provides constant DC current in mA

Main Features

- Violation warning circuit
- Current Range : from 10 µA to 99 mA
- 3 modes of Operation
- Digital setting of constant current and time duration
- Pulse Duration : timed between 1 and 99 seconds

Controls



The instrument controls are all placed on the top panel; the parameter are set by two thumb-wheel switches:-

- **Current output adjustment**, in the range 10µA to 99mA
- **Pulse duration** from 0.1 to 99 seconds.

The mode of operation can be selected via a 3-position switch:-

- **Continuous**: the current flows through the preparation in a continuous mode
- **Stand-By**: the instrument is ready to operate but the output stage is not energized
- **Pre-set Duration**: the current flow is timed according to the setting

Three binding posts are located at the upper right of the Lesion Maker: either the red (+) and the black (-) can be connected to the lesion making electrode.

The other binding post is usually connected to a pad electrode with electrolyte on the preparation. Either red (+) or black (-) may be grounded via the green binding post.

Led Indicators

Three LED indicators are embodied on the top panel:-

- **POWER** (green) which lights when the unit is ON
- **MONIT.** (red) which monitors the presence of lesion current
- **VIOL.** (yellow) which indicates when the current does not correspond to the setting

Electrodes

Usual needle electrodes, prepared by the researcher according to his/her experimental needs can be used in conjunction with the 53500 Lesion Making Device.

We have the capability and will to manufacture electrodes based on the customer's request.

Ordering Information

53500	**Lesion Making Device** standard package, including:-
53500-310	Set of 3 output plugs
53500-302	Instruction Manual
E-WP 008	Mains Cord

Technical Specifications

Current Range	from 10 µA to 99 mA
Pulse Duration	timed between 1&99 seconds or manually controlled
Compliance Voltage	200 V DC
Max. Electrode R	20MΩ(10µA) down to 2KΩ (100 mA)
Mains Supply	115 or 230V / 50-60 Hz
Power Consumption	20 W max.

Physical

Dimensions	25x15x11 cm
Weight	1.5Kg
Shipping Weight	2.8Kg approx.
Packing	45x34x26cm

Bibliography

- S.M. Fortin et alia: "**UNIT 7.25 Sampling Phasic Dopamine Signaling with Fast-Scan Cyclic Voltammetry in Awake, Behaving Rats**" Current Protocols in Neuroscience, Jan. ***2015***
- V. Campese et alia: "**Modulation of Instrumental Responding by a Conditioned Threat Stimulus Requires Lateral and Central Amygdala**" Froentiers in Behav. Neurosc. 9(293), ***2015***
- S.M. Fortin et alia: "**Sampling Phasic Dopamine Signaling with Fast-Scan Cyclic Voltammetry in Awake, Behaving Rats**" Current Protocols in Neuroscience, UNIT 7.25, published online 5 Jan ***2015***
- V.D. Campese et alia: "**Lesions of Lateral or Central Amygdala Abolish Aversive Pavlovian-to-instrUmental Transfer in Rats**" Front Behav Neurosci. 8: 161, ***2014***
- M.G. McCue et alia: "**Medial Amygdala Lesions Selectively Block Aversive Pavlovian–Instrumental Transfer in Rats**" Front Behav Neurosci. 8: 329, ***2014***
- Stroobants et alia: "**Increased Gait Variability in Mice With Small Cerebellar Cortex Lesions and Normal Rotarod Performance**" Behav. Brain Res. 241: 32-37, ***2013***
- L.B. Cruz et alia: "**Effect of the Bone Marrow Cell Transplantation on Elevated Plus-Maze Performance in Hippocampal-Injured Mice**" Behav. Brain Res. 248: 32-40, ***2013***
- M.E. Wang: "**Long-Term Stabilization of Place Cell Remapping Produced by a Fearful Experience**" J. Neurosci. 32(45): 15802-15814, ***2013***

Stereotaxic Instruments
by Stoelting

Cat. No. 51600

General

The Lab Standard™ Stereotaxic Instrument, manufactured by Stoelting, is ideal for researchers in need of a versatile, reliable instrument for stereotaxic procedures with small animals.

Precision alignment when using the Lab Standard™ ensures accurate placement of electrodes, micropipettes, and other devices.

The time-proven 'U'-Frame design concept, sturdy construction, and adaptability to most model species make this the best choice for a stereotaxic instrument.

SLEEK, COMPACT DESIGN

ACCESSORIES AVAILABLE FOR USE WITH A WIDE VARIETY OF SMALL ANIMALS

Classic and Proven U-Frame Design

- Large, easy to read vernier scales. Scales are laser engraved — accurate to 100 microns
- Triple lead screws for fast positioning 80 mm of vertical, lateral and anterior-posterior travel
- Absolute lock at 90 degrees (vertical) Brass bushings in manipulator arm permit electrical grounding

Stoelting's Lab Standard™ offers several advantages over competing instruments:

Easily Read Scales

All scales are oriented to be read easily from the open end of the 'U'. This is the position from which most scientists prefer to work. The numerals on the scales are larger, and therefore more easily read. The scale lines are laser engraved, to allow finest possible permanent marking of scales on all 3 axes. Precise alignment with facing vernier scales gives accurate resolution to 0.1mm.

Smooth Movements

The Lab Standard's™ exclusive, triple lead screws allow the fastest positioning possible, consistent with lining up the scales easily at a given coordinate.

Versatily of Positioning

The manipulator arm controls medio-lateral and vertical positioning via lead screws, and antero-posterior movement via dovetail slide movement, with 80 mm of travel possible in each direction. A Universal Joint allows the investigator to change the angle of the probe up to 90° in either the antero-posterior or medio-lateral planes. The improved locking mechanism on the Lab Standard™ will hold any angle position without slippage. And of course, it also provides an absolute lock at 90° vertical.
In addition, a swing joint allows the investigator to conveniently swing the manipulator arm and probe out of the way for performing a procedure — then reliably return the probe to the same point.

Convenient for Electrophysiology

Integral brass bushings in the manipulator arm allow grounding directly to the closest metal on the manipulator arm — even the probe holder.

Selection of Accessories

Species adaptors are available to fit rat, cat/monkey, dog/monkey, mouse, guinea pig and small bird. Probe holders and species adaptors for 'U' frame stereotaxic instruments from other manufacturers are generally compatible with the Lab Standard™ frame.

Ordering Information

51600	Lab Standard w/18 Degree Earbars
51650	Lab Standard w/45 Earbars
51653	Dual Lab Standard Stereotaxic w/45 deg. Ear Bars
51603	Dual Lab Standard Stereotaxic w/18 deg. Ear Bars
51601	Lab Standard without Manipulator Arms

www.ugobasile.com

INFUSION PUMPS
by KDS

SO ADVANCED THEY'RE SIMPLE !!

General

Ugo Basile presents an entirely new generation of micro-processor controlled syringe pumps. They are designed specifically for applications requiring high metering precision at low, pulse free flow rates.
KDS pumps, manufactured by KD Scientific Inc., U.S.A., provide a unique combination of sophisticated features and advanced microstepping motor-drive technology. The result? KDS pumps routinely perform many of the tasks that other pumps make you do manually. So you have more time for what's really important: your research.
KDS pumps are engineered by the designer of the best selling laboratory syringe pump, to ensure you of years of unsurpassed accuracy and reliability. In addition, you'll find they are extremely simple to set-up and use.
And surprisingly affordable.

Setup is as easy as:

- Select syringe from displayed table
- Enter volume to be dispensed
- Enter flow rate, then press "start" button. It's that fast...and that simple!

Ugo Basile: more than 10,000 citations

Common to all models

- A simple menu-driven set up without printed look-up tables **performs rate and volume control and automatic shut-off**. Just set the volume you want dispensed. Volume is tracked continuously on the LC display. Then, when the preset volume has been dispensed, the pump shuts off automatically.
- **An alphanumeric display helps eliminate reading errors**. Their easy-to-read display provides real-time readings using both parameters and values for clearer, mistake-free readings.
- **You can control KDS pumps in many different ways**. Built-in TTL and RS-232C interfaces permit easy external control.

Operation

1. Find the syringe you use from the displayed table. Enter its code number.
2. Enter the volume to be dispensed
3. Enter the flow rate, then press the "start" button. It's that fast and simple! Your settings are permanently stored in memory – there's no need to re-enter them each day

Ordering Information

Cat. No.	Mode	N. of Syringes	Dim. cm	Weight Kg.
KDS 100	Infusion	1	23x15.3x14	2.00
KDS 101	Infusion	2	23x15x14	2.00
KDS 120	Push/pull	1+1	23x15x14	2.00
KDS 200	Infusion	2	28x23x14	4.00
KDS 210	Infusion/ Witdrawal	2	28x23x14	4.00
KDS 220	Infusion	Multiple	28x30.5x14	4.25
KDS 230	Infusion/ Witdrawal	Multiple	28x30.5x14	4.25
KDS 250	Infusion	4 (different size)	28x23x15.3	4.00
KDS 260	Push/pull	2+2	28x23x14	4.25
KDS 310	Nano Pump	1	2 items	2.00

Flow Rates

Models KDS 100 & KDS 120

Syringe	Minimum	Maximum
10 µl	0.1 µl/h	126.5 µl/h
25 µl	0.1 µl/h	318,8 µl/h
50 µl	0.2 µl/h	625 µl/h
100 µ	1.0 µl/h	1274 µl/h
250 µ	2.0 µl/h	3164 µl/h
500 µ	3.0 µl/h	6359 µl/h
1ml	0.01 ml/h	13,2 ml/h
2,5 ml	0.02 ml/h	31,7 ml/h
3 ml	0.02 ml/h	44.9 ml/h
5 ml	0.03 ml/h	87.0 ml/h
10 ml	0.1 ml/h	125.0 ml/h
20 ml	0.1 ml/h	219.0 ml/h
30 ml	0.1 ml/h	282.0 ml/h
60 ml	0.2 ml/h	426.0 ml/h

Model KDS 101

Syringe	Minimum	Maximum
10 µl	0.001 µl/min	0.350 µl/min
25 µl	0.001 µl/min	0.884 µl/min
50 µl	0.001 µl/min	1.759 µl/min
100 µl	0.001 µl/min	3.526 µl/min
250 µl	0.01 µl/min	8.78 µl/min
500 µl	0.01 µl/min	17.65 µl/min
1 ml	0.1 µl/min	35.2 µl/min
3 ml	0.1 µl/min	122.5 µl/min
5 ml	0.1 µl/min	176.2 µl/min
10 ml	0.001 µl/min	0.351 µl/min
20 ml	0.001 µl/min	0.602 µl/min
30 ml	0.001 µl/min	0.773 µl/min
60 ml	0.001 µl/min	1.175 µl/min

Models KDS 200/220, KDS 210/230, KDS 250/260

Syringe	Minimum	Maximum
10 µl	**0.001 µl/h**	**21.1 µl/min**
25 µl	**0.003µl/h**	**53.15 µl/min**
50 µl	**0.005 µl/h**	**105.8 µl/min**
100 µl	**0.009 µl/h**	**212.6 µl/min**
250 µl	**0.021 µl/h**	**527.6 µl/min**
500µl	**0.042 µl/h**	**1060 µl/min**
1 ml	**0.083 µl/h**	**2119 µl/min**
3 ml	**0.288 µl/h**	**7360 µl/min**
5 ml	**0.414 µl/h**	**634 ml/h**
10 ml	**0.828 µl/h**	**1270 ml/h**
20 ml	**1.414 µl/h**	**2171 ml/h**
30 ml	**1.817 µl/h**	**2789 ml/h**
60 ml	**2.757 µl/h**	**4234 ml/h**
140 ml	**5.746 µl/h**	**8834 ml/h**

PHYSIOLOGY

PAIN AND INFIAMMATION

MOTORY COORDINATION, GRIP, STRENGTH, ACTIVITY

VENTILATORS AND GAS ANESTHESIA

BEHAVIOUR, CONDITIONING, REWARD

BEHAVIOUR, MAZES, TRACKING

TISSUE BATHS, TRANSDUCERS, RECORDERS

MISCELLANEOUS, ECT, LMD

BLOOD PRESSURE, VITAL FUNCTIONS

METABOLISM, FEEDING BEHAVIOUR

MUROMACHI MICROWAVE FIXATION

ugo basile®

TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com
sales@ugobasile.com

ugo basile
TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com

Blood Pressure Recorder (non-invasive)

Cat. No. 58500 for Rats
Cat. No. 58600 for Mice
Cat. No. 58550 for Rats & Mice

General

The BP RECORDER 58500 combines three main systems

- pressure generation-pressure monitoring system
- a pulse amplifier and
- a thermal-array analog & digital recording unit

with **two auxiliary systems**

- pulse rate measuring and recording
- microprocessor controlled functions to self diagnosis, calibration, signal filtering, signal storage.

Instrument Description

Pressure is transmitted to the tail cuff; as soon the cuff pressure exceeds the diastolic pressure and starts to narrow the tail artery, the amplitude of the recorder pulse wave gradually decreases until the artery is completely constricted (ischemic), the graph becoming a straight line.

This point indicates the maximum internal pressure of the artery (**systolic pressure**) on the paper grid, on which the **actual pressure** of the system is **digitally printed in 10 mm Hg steps.**

At the end of the recording a second pressure measurement can be started, with decreasing pressure. The systolic pressure is indicated, this time, by the return of the pulse tracing.

The animal **pulse rate** can be assessed in real time by a pulse rate counter which picks the signal from the pulse transducer.

INDIRECT MEASURING & RECORDING OF THE SYSTOLIC AND DIASTOLIC PRESSURE IN UNANAESTHETIZED RATS & MICE

Main Features

- graphic printer
- graphic display
- analog output to digital recorders
- pulse transducers of superior performances
- analogue & digital recording of all experiment phases
- reliable pressure generator, providing smooth, stepless pressure build-up

Ugo Basile: more than 10,000 citations

Animal Restrainers

A convenient animal restrainer is provided with the standard package. Our models are particularly suitable, being purposefully designed for this task, as they feature:-

- a conical "muzzle" to confine the animal head
- availability in 4 different diameters for rat and one for mouse, to fit various animal sizes
- telescope-adjustable length
- a quick fit/release back lid with an ample U-shaped tail slot
- convenient ventilation slots and selection of heat conductive materials, to guarantee body heat dissipation.

Optional Rat Heater / Scanner

The **58000-845 Heating Box for Rats** is a compact temperature controlled "cupboard", inside dimension 57(w)x47(d)x20(h) cm, to lodge and prewarm 5 rats, each in its individual holder; **58000-840**, designed **for mice**, has the same dimensions, but it accommodates 6 mouse holders.

The **58000-850 Rat Scanne**r is also available, combining the pre-warming features, with an electrical/pneumatical switch which enables connection of up to 5 rodents, tail cuff and pulse pick-up positioned on their tail, to scan their blood pressure in sequence.

Both Rat Scanner and Heating Boxes come complete with holders of selectable diameter.

Ordering Information

58500 **BP RECORDER**, with accessories for **RAT**: 8mm pulse pick-up, 13mm cuff, 50mm holder
58600 **BP RECORDER**, with accessories for **MOUSE**: 3mm pulse pick-up, 6mm cuff, 30mm holder
58550 **BP RECORDER**, with accessories for **RAT & MOUSE**

Each BP Recorder includes as standard: dedicated software 52050-08, serial cable & USB adaptor, paper roll.

Available Pulse Pick-Ups

58000-503 Pulse Pick-up for Mouse, diam. 3 mm
58000-504 Pulse Pick-up for Mouse, diam. 4 mm
58000-505 Pulse Pick-up for Rat, diam. 5 mm
58000-506 Pulse Pick-up for Rat, diam. 6 mm
58000-507 Pulse Pick-up for Rat, diam. 7 mm
58000-508 Pulse Pick-up for Rat, diam. 8 mm
58000-509 Pulse Pick-up for Rat, diam. 9 mm

Available Tail Cuffs

58000-606 Tail Cuff for Mouse, diam. 6 mm
58000-609 Tail Cuff for Rat, diam. 9 mm
58000-611 Tail Cuff for Rat, diam. 11 mm
58000-613 Tail Cuff for Rat, diam. 13 mm

Available Holders

58000-343 Mouse Holder, 30 mm I.D.
58000-344 Rat Holder, 40 mm I.D.
58000-345 Rat Holder, 50 mm I.D.
58000-346 Rat Holder, 60 mm I.D.
58000-348 Rat Holder, 80 mm I.D.

Optional

58000-840 Mouse Heater, compl. with 6 mouse holders
58000-845 Rat Heater, complete with 5 rat holders of selectable I.D.*
58000-850 Rat Scanner, complete with 5 rat holders of selectable I.D.* °

* *if diameter is not specified, the 50mm size will be supplied*

° *pressure cuffs & pulse pick-ups are not included, and should be ordered separately*

Specifications

Pressure Range	50 to 290 mm Hg
Power Requirements	115 or 230 V, 50/60 Hz, 25 W
Weight (net)	Kg 10.6
Shipping Weight	Kg 15.0 approx.
Dimensions	35x35x17(h)cm
Packing dimensions	80x60x44cm

Bibliography

- M. Gerold & H. Tschirky "**Measurement of Blood Pressure in Unanaesthetized Rats**" Arzneimittelforschung 18: 1285-287, **1968**
- M. Gerold & H. Fünfshilling: "**Abhängigkeit der Indirekten Blutdruckmessung an Ratten von der Grösse der Kompressionmanchetten**" Arzneimit-telforschung. 21: 2071-2074, **1971**.

Papers quoting Ugo Basile Model

- L. Testai et alia: "**The activation of mitochondrial BK potassium channels contributes to the protective effects of naringenin against myocardial ischemia/reperfusion injury**" Biochemical Pharmacol.: 85(11): 1634-1643, **2013**
- A. Kolosov et alia: "**Intravenous Injection of Leconotide, an Omega Conotoxin: Synergistic Antihyperalgesic Effects with Morphine in a Rat Model of Bone Cancer Pain**" Pain Medicine: 12(6): 923-941, **2011**
- M.A. Gouda et alia: "**Synthesis and anti-hypertensive activity of novel sulphadimidine derivatives**" Med. Chem Res.: 21(11): 3902-3906, **2011**
- J. Tchekalarova et alia: "**Diurnal rhythms of spontaneous recurrent seizures and behavioral alterations of Wistar and spontaneously hypertensive rats in the kainate model of epilepsy**" Epilepsy & Behavior 17: 23-32, **2010**
- C. Bolego et alia: "**Selective estrogen receptor-α agonist provides widespread heart and vascular protection with enhanced endothelial progenitor cell mobilization in the absence of uterotrophic action**" FASEB Journal: fj.09-139220, pub. online **2010**

ugo basile
TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com

Blood Pressure Transducer (invasive)

Cat. No. 17844

Easy to fill

High accurancy

Robust, reusable transducer

Typical Applications

- **Arterial or venous blood pressure measurement**
- **Connects to Data Acquisition Systems or Chart Recorders**
- Urodynamic measurement
- Intrauterine Pressure Measurement
- Intracranial Pressure Measurement
- Catheterization
- Intensive Care Unit

Main Features

- MPG Klasse II b, CE 0470
- Gold plated for easier cleaning
- Only wiping cleaning necessary
- Disinfection/Sterilisation with VIRKON (10 to 30 min) possible
- Short adapter cable with transducer + separate monitor cable
- Dome with “Snap-on” coupling
- Very high frequency response
- High overload protection (10.000 mm/Hg)
- Dome dry-coupled to the transducer

Ugo Basile: more than 10,000 citations

Specifications

Pressure Range	-20...+300mmHg
Overpressure max.	10 000mmHg
Sensitivity	50 µV/V/cmHg
Resonance Frequency	300Hz typical (Transducer and Dome)
Electrical Excitation max.	15V DC or AC
Input Resistance (Input)	700Ohm
Output Resistance (Output)	1000Ohm
Non-Linearity & Hysteresis	max. 0.5% FS
Zero Balance	max. ±30mm/Hg
Thermal Sensitivity Shift	0.15% / °C
Thermal Zero Shift	max. 0.25mm/Hg/°C
Operating Temperature Range	+10...+50°C
Storage Semperature Range	-20... +70°C
Insulation Resistance	min. 103MOhm
Leakage Current	max. 1.5µA at 250V-50Hz
High Voltage Resistance	10KV between Dome and Transducer
Length of Adapter Cable	ca. 30cm
Length of Monitor cable	ca.250cm
Connector	see "compatibility"

Compatibility

Before ordering, check the connection compatibility of your amplifier/recording System.

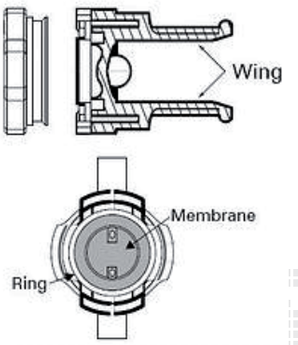
The Pressure Transducers are normally supplied with a connector (type -F) designed for Ugo Basile **DataCapsule-*Evo* Recorder** (see datasheet).

If the customer wishes to make use of other recording apparatus, the transducers can be supplied with appropriate connector on request: we will be glad to provide transducers with different connectors, if available, or to provide witing information and instruction.

Domes

The 17844 is provided with a dome provided with with stop cock. The dome has wings, for easy fitting on the transducer.

The dome should be filled bubbleless at max. pressure of 50mmHg



Ordering Information

17844 **Pressure Transducer "Sensonor", type SP-844,** complete with one dome 17844-001 lodged in its plastic case.

Accessories

17844-001 **Clear Polycarbonate Dome** (with Luer-Lock Fitting), complete with 3-way stopcock

17844-002 **Set of 10 Clear Polycarbonate Dome** (with Luer-Lock Fitting), complete with 3-way stopcock

Physical

Weight	0.024Kg (without cable) 0.2Kg (with cable)
Shipping Weight	0.4Kg
Shipping Dimensions	46x38x27cm

www.ugobasile.com

MouseOx *Plus*

Pulse Oximeter for Mice and Rats

General

The MouseOx® is the world's first and only patented **non-invasive** vital signs monitor, for small laboratory animals; specifically designed for mice, it can be used on larger rodents too!

The MouseOx and The MouseOx Plus® are being used by over 1,500 researchers and veterinarians from Universities, Pharmaceutical Companies, and CRO.

It is fully controlled by PC with a **user-friendly interface.**

The new **MouseOx Plus®** uses the same technology as the original MouseOx® but also includes significant improvements:

- the enhanced signal processing ability improves response to the motion of conscious subjects; the pulse signal is maintained and quickly re-acquired following significant movement.
- the modular software design allows the end user to purchase only the functionality that is needed.
- measurement of core body temperature is now available
- the optional Multiplexer makes it possible to monitor up to 16 animals (or 8 animals with temperature), using 1 MouseOx Plus.

Anesthetized Subjects

Conscious Subjects

MRI Compatible

SMALL ANIMAL VITAL SIGNS MONITOR

Main Features

- Simple non-invasive sensor clips for mice and rats
- Monitor data in real time while recording
- USB plug-and-play, user-friendly interface
- High accuracy at heart rates up to 900 BPM
- Works on neonates through adults

Ugo Basile: more than 10,000 citations

General

The **MouseOx Plus Small Animal Vital Signs Monitor** provides the following measurements:

- Arterial Oxygen Saturation
- Heart Rate
- Breath Rate
- Temperature (optional)
- Pulse Distention
- Breath Distention

MouseOx Plus® works with both mice and rats; there are 16 variations of the MouseOx® sensor available to accommodate various sensor placement options on mice and rats, ranging in size from neonatal mice to rats over 500gm. The subject must have a heart rate of at least 90 BPM and no greater than 900 BPM.

The MouseOx® oxygen saturation measurement has only been validated with mice and rats, but the instrument is being used in many research projects on subjects other than mice and rats. Some examples include Guinea pigs, hamsters, rabbits and small primates such as marmosets.

Cardiopulmonary Data Recorder

When used as a Cardiopulmonary Data Recorder, the MouseOx Plus provides:

- Quick Check of Vital Signs
- Real-time Changes in Heart Rate, Breath Rate & O2 Saturation
- Oxygen Saturation During Hypoxemia
- Analog Data Output

Surgery Monitor:

When used as a Surgery MonitorMouseOx Plus:

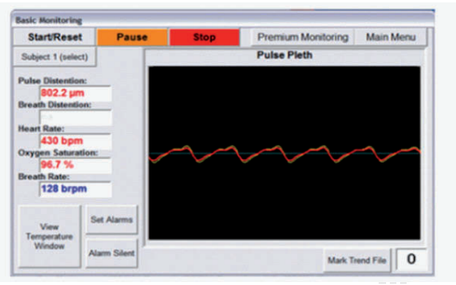
- Prevents Hypoxia During Surgery
- Titrates Mechanical Ventilation
- Ensures Proper Depth of Anesthesia
- Titrates Supplemental Oxygen

Features:

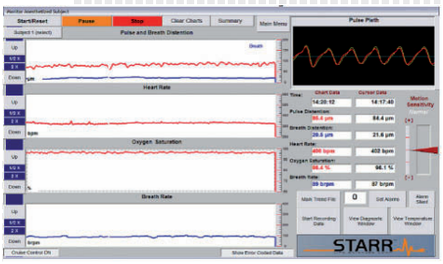
- Immediate responding, beat-by-beat measurements
- High accuracy at heart rates up to 900 BPM and breath rates up to 600 BrPM
- Drawing of blood is not required for any reason
- Simple non-invasive sensor clip enables quick and easy attachment to the subject
- USB plug-and-play technology easily turns your Windows based PC into a low cost physiologic monitor
- Monitor data in real-time, while recording to a file
- Experiment event markers allow the user to mark important events in the data file
- Enhanced signal processing ability improves response to the motion of conscious subjects

Standard Software and Options

The **Standard software** includes basic monitoring and parameter alarms for all of the vital signs provided by the MouseOx Plus; it is included with all MouseOx Plus systems and is intended for basic monitoring applications.



The **Premium Monitoring & Recording Software** includes trending charts, real time recording options, file markers for noting important events, and a quick averaging diagnostic feature for spot-checking



The **Conscious Applications Software** includes enhanced filters and control algorithms to allow the MouseOx® Plus to monitor conscious unrestrained subjects, and provides a subject activity measurement

MRI software allows for the use of the MRI sensor.

Ordering Information

015000	**MouseOxPlus System**, Operation **110V** *
015001	**MouseOxPlus System**, Operation **230V** *
015007	**Premium** Monitoring & Recording Software
015017	**MRI Module**, including Software, 20' Sensor with 15' Copper Wire and 5' Fiber Optic, 2 Mouse Thigh Clips, 2 Rat Foot Clips
015002	**Conscious** Applications Module

Sensors

* Two sensors, selectable when ordering, are included free of charge with each MouseOxPlus System:

CollarClip™ available in XS, S, M, L, XL, 2XL size
ThroatClip™ available in XS, S, M, L, XL, 2XL size
Mouse Thigh sensor, Rat Foot Sensor

Physical

Dimensions	16x12x4(h)cm
Weight	2Kg
Shipping Weight	5Kg approx.
Packing	50x39x17cm

NOTE : Manufacturer's warranty for MouseOx & accessories is limited to 12 months.

ugo basile®
TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com

Metabolic Cages

Cat. No. 41700-002, -004, -005 for Rats
Cat. No. 4170-003, -033 for Mice

General

These carefully engineered metabolic cages, manufactured by TECNIPLAST, are designed for simplicity of operation and total part interchangeability and feature a unique funnel/cone design which effectively separates faeces and urine and collects them into vials outside the cage.

All components below the cage floor are removable without upsetting the test animal and thus preventing behavioural artifacts.

Four models are available for either rats or mice; their dimensions comply with current USA animal welfare regulations. See Ordering Information for basic metabolic cages.

The Tecniplast Metabolic Cages feature a unique funnel and cone design that effectively separates faeces and urine into tubes outside the cage.

There's **no urine washover** and no potential for urine to enter the faeces tube, so separation is immediate and complete. The results are untainted and the samples reliable.

The cage performs well with either mice (in group) or rats; a single mouse cage of new design is also available. Space saving and great visibility are facilitated by the 12-cage rack.

RELIABLE

DURABLE

- **Practicality of use**
- **Flexibility**
- **Space saving**

N E W
see also 41853, with food/drink and activity analysis

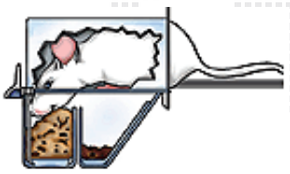
- Unique design and high quality materials, to maximize reliability and endurance.
- Every component is designed to be interchangeable to provide maximum flexibility
- Separation apparatus featuring low-adherence plastic materials: **perfect separation and collection** of faeces and urine
- Easy to remove feeder and collection tubes: feed filling and samples collection without disturbing the animals on test.

Cage Components

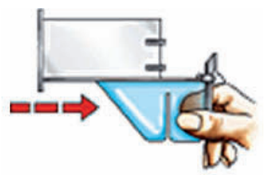
The Metabolic cage components are:

- an **Upper Chamber,** made of smooth, gnaw-proof materials. ● a **Feeder Chamber**, located outside cage. Size discourages rodent from nesting or sleeping inside. The drawer slides out for easy filling without disturbing the animal
- a **Collection funnel** and **separating cone**, unique design and non-wetting PMP ensure immediate, complete separation of faeces and urine
- a **Faeces Collection tube**, made of non-wetting PMP. Pellets roll down side of funnel to be collected in tube. Unlocks with single twist from outside of cage, without disturbing the animal.
- a Support grid of stainless-steel lets excreta pass through the conveniently spaced bars; mouse cage includes mouse-sized grid.

Cage Design



Two-part **feeder chamber l**ocated outside the cage. The front chamber catches spilled food so faeces won't be contaminated. Feeder sizes prevent rodent from nesting or sleeping inside. Available in five sizes.



Drawer slides out of feeder chamber for easy filling, without disturbing animal.

Calibrated to accurately measure intake. Drain diverts overflow into collection tube so **water** can't contaminate urine.

Urine flows along the inside surface of the **collection funnel** and is directed by the urine ring directly into the urine collection tube.

A simple twist unlocks either faeces or urine tube. No need to dismantle cage or disturb animal.

Entire **lower section** of the cage can be easily removed.

Convenient for cleaning during multi-phase investigation.

Standard Cage Dimensions

The cage upper chamber, is available in two sizes:

- for mice and rats up to 300g, with a surface of 320 cm^2 and a height of 14 cm;
- for rats over 300g, with a surface of 450 cm^2 and a height of 18 cm.
- In the single-mouse cage, the usable floor area is 200cm^2 with an internal height of 13cm

Surface and height are comply with current regulations.

Net weight	:	6Kg
Gross weight	:	10Kg
Packing dimensions	:	67x42x53cm

Ordering Information

BASIC METABOLIC CAGES

41700-002	Metabolic Cage for rats up to 150g
41700-003	Metabolic Cage for mice
41700-004	Metabolic Cage for rats 150 to 300g
41700-005	Metabolic Cage for rats over 300g
41700-003	Metabolic Cage for mice (groups)
41700-033	Metabolic Cage for single mouse

Above models include a single cage stand (except 41700-033 which is self-standing

3M12D100	Vertical Rack for 12 Metabolic Cages, suitable for models 41700-002/005. Dimensions 124x48x190 cm

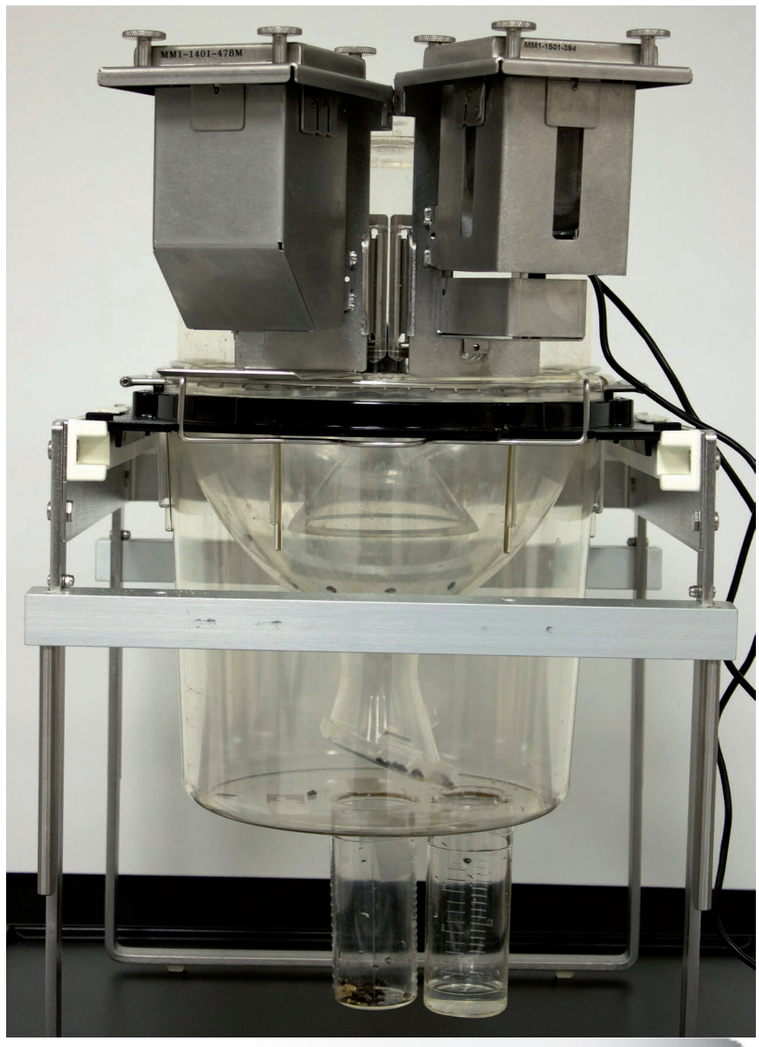
ugo basile®
TRANSFORMING IDEAS INTO INSTRUMENTS

www.ugobasile.com

Metabolic Cages

with Feeding/Drinking Analysis

Cat. No. 41853



General

Ingestive behavior sustains life, but in some forms can lead to serious conditions as obesity, diabetes, and chronic inflammation.

Understanding the signals that initiate ingestion and satiety require synchronized data with high temporal resolution, especially if the pattern of Ingestive events is important.

Animal models (for example, obese and diabetic mice) exhibit symptoms similar to those in humans.

When closely monitored model organisms reveal relevant differences that may correlate with those of human disorders in vital parameters such as feeding/drinking (quantity & frequency of food/drink uptake), activity (with optional I.R. motion detectors) and excretion (the latter assessed by volume or weight).

Ugo Basile introduces a new higher resolution model of feeding analiser, resulting from our cooperation with SABLE SYSTEMS International, worldwide leader in metabolic and intake measurement.

for Mice only

DESIGNED TO MEASURE:
- FEEDING BEHAVIOUR
- EXCRETORY FUNCTIONS
- ACTIVITY (OPTIONAL)

SABLE inside

INNOVATIVE DESIGN

- facilitates retrofitting of Ugo Basile older models of Mouse Feeding Analyser
- makes upgrade from simple Metabolic Cage to Feeding Analyser extremely easy!

For all types of investigations on METABOLISM, including:

- preclinical trials evaluating treatments for anorexia
- addiction/aversion to particular substances
- thirst arousing and quenching mechanism
- feeding habits and their modification brought about by environmental conditions or toxicity

Ugo Basile: more than 10,000 citations

This innovative ingestive behavior system includes:

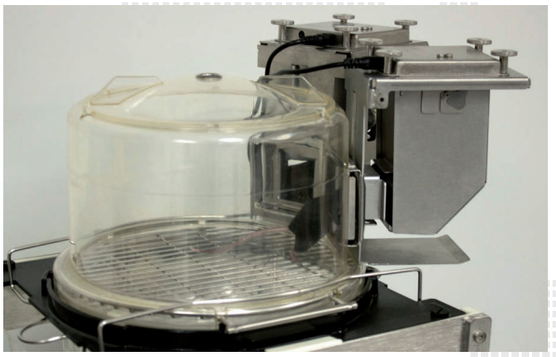
- **a basic Metabolic Cage**
- **a mass measurement system**
- **an interface and software routine**
- **an optional activity sensor**

Basic Cage Design

These carefully engineered metabolic cages are manufactured by TECNIPLAST, see separate datasheet, for separation and quantification of urine and faeces.
All components below the cage floor are removable without upsetting the test animal.

Feeding and Drinking Analysis

Basic Metabolic Cages are upgraded with the addition of the FiWi High-ResolutionFood and Water Systems, for intake quantification and meal patern analysis.



At the heart of the system is the Sable MM1 food and water load sensor, providing high quality results.

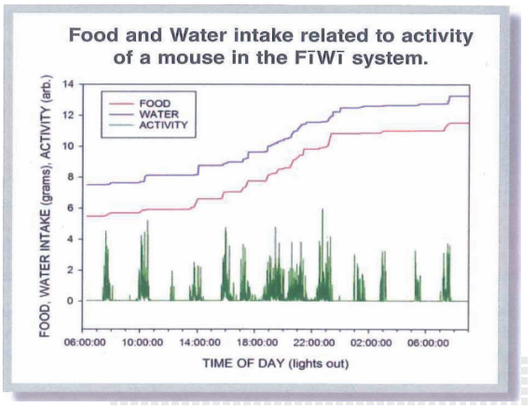
Activity Detection

This versatile option measures the ambulatory activity of the rodent can be measured via the optional Environmental Sensor Array (ESA), monitoring environment and activity.

The ESA Environmental Sensor Array also provides monitoring of light and sound level, barometric pressure, cage temperature, and relative humidity, all relevant data for the animal welfare and test repeatability.

Data Recording

Data are recorded and analysed by software/interface package 41850-010 which includes EXPEDATA (data analysis) and METASCREEN (data acquisition) software and IM-2 Interface Module.



Ordering Information

METABOLIC CAGES WITH FOOD & DRINK RECORDING PROVISION

41853 Feeding/Drinking Monitoring system: one Mouse Metabolic Cage, provided with stainless-steel food and water hoppers, precision mass monitoring unit (0-1000g, 3mg resolution) & cage controller, plus software/interface pckg. 41850-010
41853-X2 Sistem of 2 Metabolic Cages, as above
41853-X3 Sistem of 3 Metabolic Cages, as above
41853-X4 Sistem of 4 Metabolic Cages, as above
41853-X5 Sistem of 5 Metabolic Cages, as above
41853-X6 Sistem of 6 Metabolic Cages, as above
41853-X7 Sistem of 7 Metabolic Cages, as above
41853-X8 Sistem of 8 Metabolic Cages, as above

Product Specifications (MM1 sensor)

Rated Load: up to1Kg
Resolution: 0.002g RMS at 2s digital filtration
Sensor Type: Quad strain gauge
Data Precision: 24bits (better than 1 part in 500,000)
Operating Temperature: **-20 to 60°C**

Optional

41850-005 SSI Environmental Sensor Array (ESA)

Product Specifications (ESA sensor)

Light sensor: 0.05 to 10,000 Lux (auto ranging); resolution: 0.05 Lux-1 Lux
Sound sensor: 20 -100+ dB range
Temperature: range 0-60°C, resolution: 0.01°C
RH Sensor: range 0-100% (non condensing), resolution: 0.01%
Barometric Pressure: range 40-110 kPa, resol. 0.001 kPa

www.ugobasile.com

New Microwave Brain Fixation System

Cat. MMW-05 (5kW)

General

In neurochemical studies of the brain, it is of great importance to measure accurately neurochemical events in vivo.

However, it is difficult to perform reproducible measurement of these events because rapid post-mortem changes occur in the brain concentrations of metabolites and neurotransmitters.

With the NEW Microwave Brain Fixation System by Muromachi, a living mouse or rat is positioned inside the applicator and, in less than 1 second, the microwave beam stops all brain chemistry at the level present in the living animal.

Measuring brain chemistry *in-vivo* is possible!

THE FASTEST AND MOST EFFECTIVE KNOWN METHOD OF HALTING BRAIN CHEMICAL ACTIVITY

brain fixation occurs in 1 second

activity of degrading enzymes is blocked

Prior to analysis of:

- Phosphorylated proteins
- Acetylcholine, Serotonin, Endorphins
- Prostaglandins, Catecholamines
- C-AMP, C-GMP, GABA, DOPA

NEW features:

- Improved usability - touch screen
- Air-cooled (no water circulation)
- CE-certified
- Absolute safety - negligible leakage

Ugo Basile: more than 10,000 citations

Various techniques have been developed to **prevent post-mortem changes**. One of the more common method is cooling or freezing by immersion of the decapitated head in liquid Nitrogen or cooled Freon to **inactivate enzymes** involved in the metabolism of these compounds.

Cooling is not fully effective in preventing post-mortem changes as the time required to freeze deep structure of the brain may range from 10 - 90 seconds; post mortem changes will occur during this period.

An alternate method is microwave heating to inactivate enzymes.

The microwave method has several advantages over cooling or freezing:

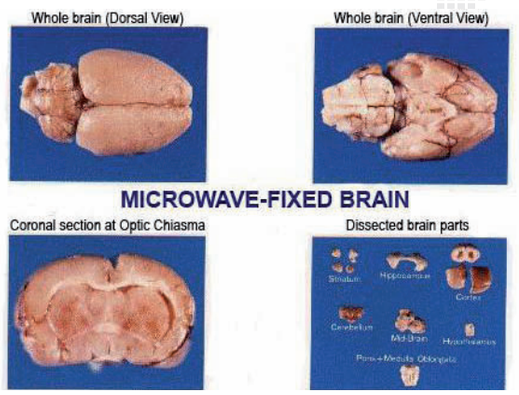
- The enzymes in the whole brain can be completely inactivated in a very short time
- The brain can be dissected easily and reproducibly at room temperature

Microwave fixation system must satisfy the following criteria:

1. elevate the temperature of brain up to 75-90°C as rapidly as possible, by effectively focusing microwave energy on the animal head
2. give the same results from animal to animal
3. be easily and safely used by personnel not experienced in microwave

Instrument Description

Thanks to Patented Microwave Focus Applicators, microwaves are channeled and focused by the wave guide from above the head, rather than in front. The entire animal head is placed in a uniform microwave field. Movements of the head do not change the field strength or microwave distribution.

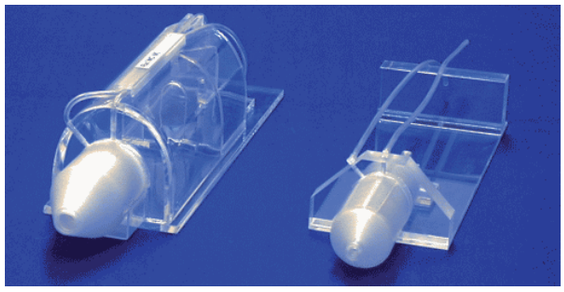


Uniform fixation of the whole brain is thus achieved, without "over cooking" and damage to the hypothalamus.

Muromachi's unique applicators provide protection to the researcher and also compensate for individual differences between animals, giving more reproducible results.

The Muromachi Microwave Fixation Systems are safely designed, so that the microwave leakage will not exceed 1 mW/cm2 (well below the safety standards).

The Microwave Fixation System comes with specific applicator heads and water-jacketed animal holders:



Ordering Information

MMW-05 **Microwave Fixation System 5KW**, including 1 Applicator head and 1 animal holder, to be selected

Applicator heads

TAW-174P	for mouse holder
TAW-424SP	for rat holder WJR-S
TAW-424MP	for rat holder WJR-M & L

Water-Jacketed Animal Holders

WJM-24	for mice 15-20g
WJM-28	for Mice 20-40g
WJR-S	for Rats 150-250g
WJR-M	for Rats 250-400g
WJR-L	for Rats 400-500g

Physical

Power	380-440VAC 20A **3-phase is required**
Dimensions	75(w)x55(d)x128(h)cm
Weight	103Kg
Shipping weight	195Kg
Packing	81x100x132cm

Bibliography

- S. Hedge et al.: "**Phosphodiesterase 11A (PDE11A), Enriched in Ventral Hippocampus Neurons, is Required for Consolidation of Social but not Nonsocial Memories in Mice**" Neuropsychopharmacol. 41: 2920-2931, 2016
- T.S. McDonald et al.: "**Alterations of Hippocampal Glucose Metabolism by Even Versus Uneven Medium Chain Triglycerides**" J. Cerebral Blood Flow & Metabolism 34: 153-160, 2014
- B. Sahin et al.: "**Evaluation of neuronal phosphoproteins as effectors of caffeine and mediators of striatal adenosine A2A receptor signaling**" *Brain Research* 1120: 1-14, **2000**
- P. Svenningsson et al.: "**DARPP-32 mediates serotonergic neurotransmission in the forebrain**" *PNAS* 99 (5), 2002
- G.L. Caporaso et al.: "**Drugs of abuse modulate the phosphorylation of ARPP-21, a cyclic AMP-regulated phosphoprotein enriched in the basal ganglia**" *Neuropharmacology* 39:1637-1644, **2000**
- A. Nishi *et al.*: "**Amplification of dopaminergic signaling by a positive feedback loop**" *PNAS Early Ed.* 1-6, **2000**

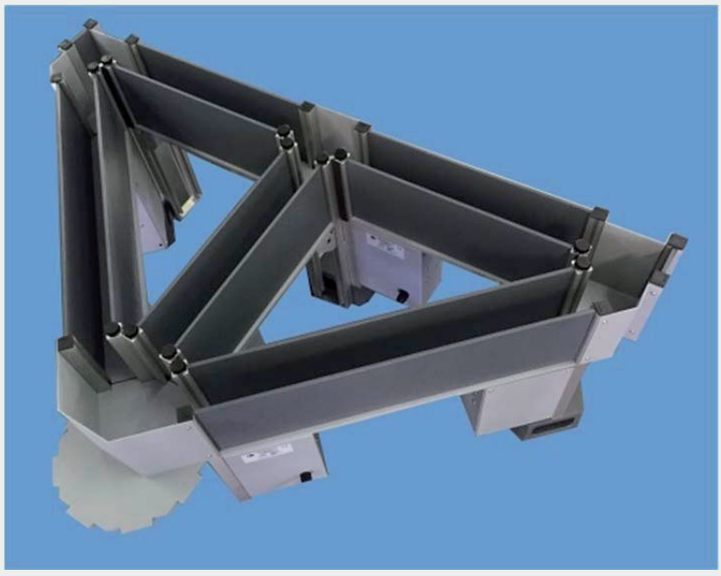
ALL STARTS WITH YOUR IDEA!

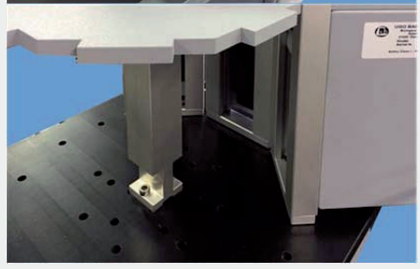
IT IS TRUE UGO BASILE TRANSFORM IDEAS INTO INSTRUMENTS!

We are a design and manufacturing company: our R&D department and our mechanical & electronic laboratories have capability and will to customize existing instruments, or create new instruments from scratch, based on the user requirements.

RESEARCHERS TRUST UGO BASILE TO FULFILL THEIR NEED OF CUSTOM INSTRUMENTS!

Here's just a sample of a custom product we have recently developed





It is interesting to know that many of the Ugo Basile legacy products originated from ideas submitted by our customers!

If you need an instruments which is not available on the market, please submit us your request using the contact page: our product manager will get in touch with you.

latest revision
21/04/2017