



UGO BASILE

TRANSFORMING IDEAS INTO INSTRUMENTS

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MOTORY COORDINATION, ACTIVITY, GRIP STRENGTH

Rotometer

Cat. No. 43000

General

The Rotometer is widely used in research on motor assessment tests. Rotometer is also used in traumatic and acquired brain injury research and spinal cord injury research.

There are several well-characterized causes for animals to exhibit rotational behavior:

- Uneven/unilateral higher expression of levels of neurotransmitters (such as GABA or dopamine). Some brain tumors can cause aberrant expression levels to occur. Injury may also interfere with proper neurotransmitter expression, and/or cause some localized change in neurotransmitter expression.
- Developmental anomalies can also cause rotational behavior.
- Anxiety/stress may cause this aberrant behavior.
- Exposure to some drugs, or drug abuse, or withdrawal from some drugs, all may have rotational sequelae.
- Physical lesions also can cause rotational behavior in an animal



No Tether !

No Jacket !

**TRULY
UNRESTRAINED
MICE**

Main Features

- No jacket or tether is necessary: the animal is completely free
- Stand-alone, with internal memory
- Quick and simple to use: no training, turn-key system with software included

Ugo Basile: more than 10,000 citations

Freely Moving Animals

To quantify rotational behavior in a freely-moving mouse is a significant development. This new Rotometer accomplishes precisely this task precisely, using new and clever technology to count clockwise (CW) and counterclockwise (CCW) rotations in an open field. The animal carries just a small magnet (not much larger than a grain of rice) on its nape or on its tail.

The magnet can be attached on the mouse tail or nape, surgically implanted or injected subcutaneously.

A convenient method is to attach a 2x15mm magnet to the base of the mouse tail by using standard laboratory tape. This easy and efficient method, involves minimal stress for the animal, and has the advantage not to require any anesthesia procedure.



Fig. 1: "15 mm magnet, attached to the mouse tail"

The injectable magnets are encapsulated within a proven bio-compatible material, to be implanted or injected subcutaneously.

The magnets fit within syringes normally used for the injection of identification transponders.



Fig. 2: "four Rotometers set up for high throughput screening, for testing multiple animals at the same time"

Principle of Operation

The mouse is placed in the open field (20cm diam. round field, bound by the acrylic cylinder). When the

animal circles within this field, or rotates in place, the magnet (carried by the mouse) also rotates. Sensors below the open field pick up these rotations, and the electronics record the rotations over time.

The design of this detecting system is very advanced, to enable the arena to be quite large whilst the aboard magnet is very small.

Data Collection

As Clockwise and Counterclockwise rotations accrue, they are displayed on the front panel. Experiments may be qualified with animal data, date, time, and other diagnostic data.

Data may be exported directly to a flash drive (included,) or to a PC via USB or serial port. Individual sessions can be stored in internal memory for later output.

Ordering Information

43000 ROTOMETER, standard package, including:

- 35100-286** Perspex Animal Restrainer
- 43000-302** Instruction Manual
- E-E 018** Set of 2 Magnets (2x12)
- E-E 019** Set of 2 Magnets (2x15)
- E-AU 041** Memory Key
- 52050-13** CUB Data Acquisition Software Package

Optional:

- 43000-321** Syringe Kit, incl. implanter, replacement needle & injectable magnets, 2x12 & 2x15 mm, 10 each

SPECIFICATIONS

Read-out	multifunction graphic display
Print-out	by optional thermal mini-printer
Connection to PC	USB /RS232C, via cable provided
Power Requir.	85 to 264 V, 50/60 Hz, xx W max.
Dimensions	cm 25(w)x37(d)x16(h) without restrainer
Animal Restrainer	cm 20 (diam.) x 25 (h)
Weight	3,5 Kg,
Shipping Weight	7,0 Kg approx.
Packing	65 x 34 x 28 cm