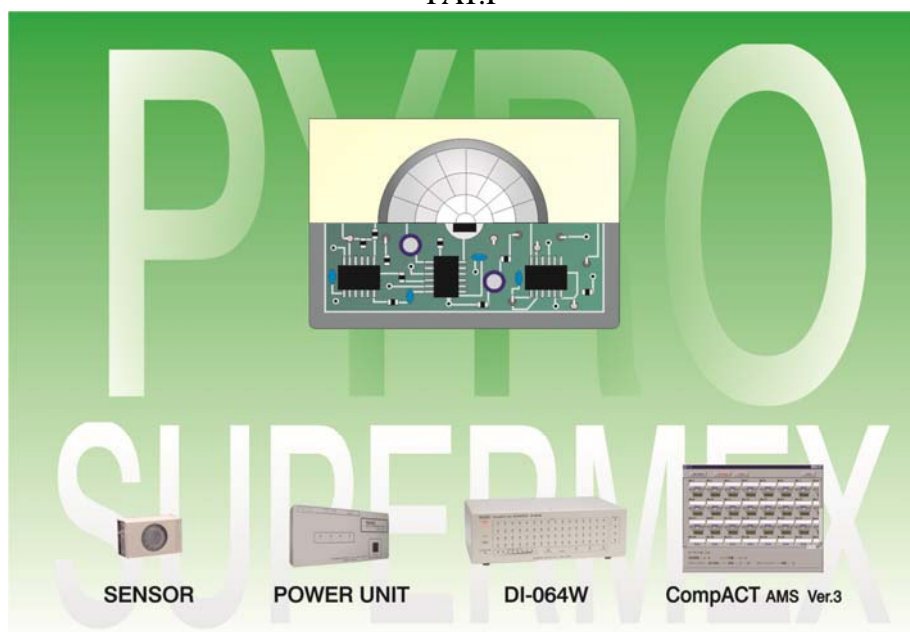


LOW-COST & MULTI-CHANNEL ACTIVITY MONITORING SYSTEM

SUPERMEX

PAT.P



Introduction

Muromachi SUPERMEX is a brand-new epoch-making activity monitoring system that enables researchers to perform a multi-channel measurement for a low cost. Any size home cage may be used unless it intercepts infrared beam in between the sensor and the animal.

Each sensor monitors motion in multiple zones of the cage through an array of fresnel lenses from a position up above the cage. So movement in X, Y and Z can be covered. The sensor head consists of paired infrared pyroelectric detectors which measure the radiated body heat of the animal. The sensor's output signals representing magnitude of the animal's movement are digitally converted, stored in the interface memory and transferred to a personal computer.

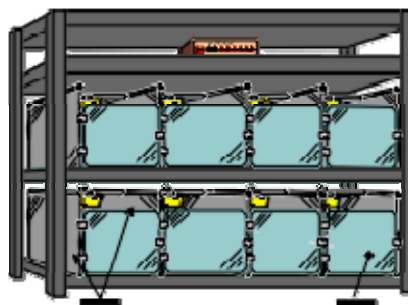
SUPERMEX can be a powerful tool for the assessment of drug efficacy, toxicological tests or for the studies of circadian rhythm by using PYB-003 Sound Attenuating Chamber with power and light-dark cycle control designed exclusively for SUPERMEX. Further, drinking and rearing can be monitored with the optional drinking sensors and rearing sensors, respectively. **Forced Swimming test** and **Tail Suspension Test** can also be performed by the use of CompACT FSS software.

Further, **Place Preference Test (CPP Test)** can be performed, too using CompACT CPP software.

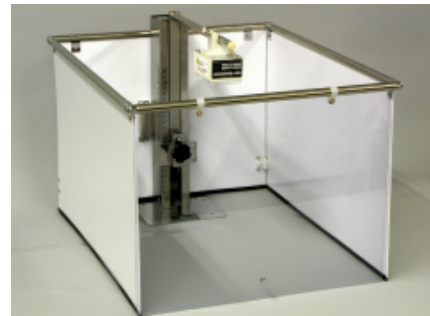
Main Features

- A variety of animals ranging from small rodents such as mice, rats, marmosets to large animals like dogs, monkeys, pigs etc. can be monitored.
- Any size home cage may be used unless it intercepts infrared beam in between the sensor and the animal.
- Drinking and rearing can be monitored with the optional drinking sensors and rearing sensors, respectively along with activity measurement.
- Forced Swimming test of mouse can be performed by the use of CompACT FSS software.
- Tail Suspension test of mouse can be performed by the use of CompACT FSS software.
- Place Preference Test (CPP Test) can be performed using CompACT CPP software.
- Activity can be monitored during the measurements with micro-dialysis or telemetry systems.
- A multi-channel system can be obtained for a lower cost compared to the conventional activity monitoring systems.
- Data covering up to 64 channels can be collected by the Model DI-064W Interface.
- Operation is very simple and sensitivity adjustment is not required once the sensor mount position and height from the cage floor are fixed.
- The number of sensors can be increased so easily.
- Four (4) models of Data Interface (8ch, 16ch, 32ch and 64ch) are available depending upon application and budget.

For small rodents there are four (4) ways of sensor installation as shown below.



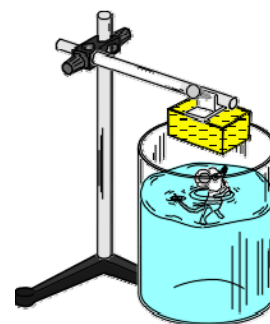
Rack-Mounted



Pipe-Mounted



Sound Attenuating Chamber-Mounted



Stand-Mounted
Forced Swimming Test(mouse)

Data Collection/Analysis Software

Pulse data sent out from SUPERMEX will be collected and stored with the DI-064W Interface and sent to a personal computer for data analysis. Since all the measurements can be controlled by the DI-064W Interface, a personal computer can be used for another application once the measurement started.

Data Collection Program CompACT AMS Ver.3

- All the channels can be started at the same time.
Each channel can be started separately.
Multiple channels can be started by the group. (Up to 32 groups can be registered.)
Sampling time can be preset for the range of 1 - 60 min.
- Designated multiple data files can be stored as a CSV file.
- Light-Dark cycle can be controlled at the user's discretion.
- Timer-Start & Timer-Stop function enables a fully automatic measurement.
- Double-Plot formatted graph can be displayed.

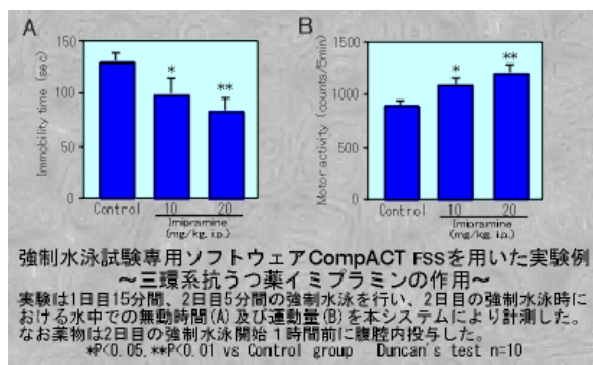


For a comfortable working environment the following specifications of PC are recommended.

- OS : Windows 2000 or later
- CPU : Core2 Duo or later
- RAM : 2GB or larger
- Display Resolution : 1024 x 768 or higher recommended
- Communication Port : RS232C

Software for Forced Swimming Test CompACT FSS (Optional Extra)


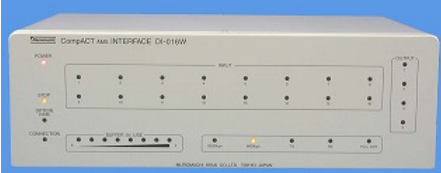

A multi-channel measurement can be done for a much lower cost compared to the conventional forced swimming test methods.



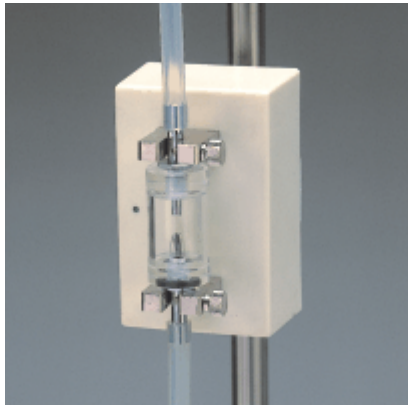
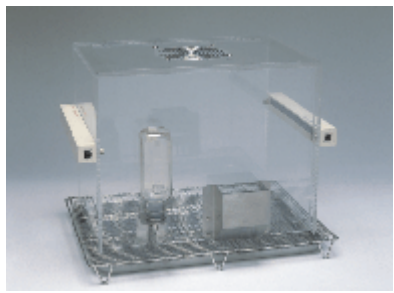

Reference : M. Sugiura et al: Japanese Journal of Neuropsychopharmacology, 19:287-291, 1997

SPECIFICATIONS

SUPERMEX SENSOR PYS-001	POWER UNIT MPU-4A	INTERFACE DI-064W
Pyroelectric Sensor Detection Area : Approx. 110° Multi-Fresnel Lens Dimensions : Approx. W55 x D85 x H75 mm Weight : Approx. 100 g Power : Supplied from MPU-4A Power Unit	Power Output : Signal Input x 4 Modular Connector Signal Output x 1 Modular Connector Signal Input x 1 Input LED Display : x 4 Dimensions : W220 x D110 x H55 mm Weight : Approx. 350 g Power : 5VDC 2A	Input : 64ch 8ch Modular Connector x 8 Output : Light Control x 4 Communication : RS-232C BUFFER RAM : 512K or 2M byte Dimensions : W330 x D215 x H105 mm Weight : Approx. 4 kg Power : 100VAC 50/60Hz

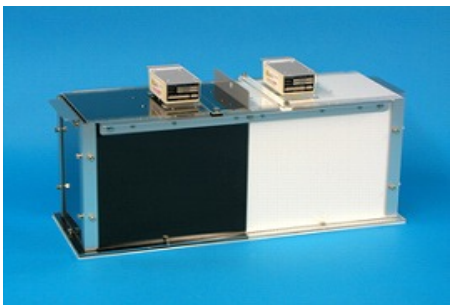
INTERFACE DI-032W	INTERFACE DI-016W	INTERFACE DI-008W
<p>Input : 32ch 8ch Modular Connector x 4 Output : Light Control x 4 Communication : RS-232C BUFFER RAM : 512K or 2M byte Dimensions : W330 x D215 x H105 mm Weight : Approx. 4 kg Power : 100VAC 50/60Hz</p>	<p>Input : 16ch 8ch Modular Connector x 2 Output : Light Control x 4 Communication : RS-232C BUFFER RAM : 512K or 2M byte Dimensions : W330 x D215 x H105 mm Weight : Approx. 4 kg Power : 100VAC 50/60Hz</p>	<p>Input : 8ch 8ch Modular Connector x 1 Output : Light Control x 4 Communication : RS-232C BUFFER RAM : 512K or 2M byte Dimensions : W330 x D215 x H105 mm Weight : Approx. 4 kg Power : 100VAC 50/60Hz</p>
		

OPTIONAL EXTRAS

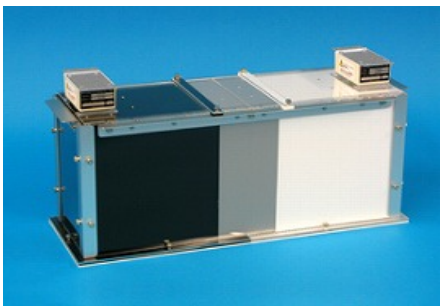
DRINKING SENSOR MDS-1B	REARING SENSOR MRS-110TX-RX WITH LONG-TERM TEST CAGE	CONTROL UNIT FOR REARING SENSOR MRS-110
<p>Detection : Contact Water Drop Volume : Approx. 0.05 cc/DROP Dimensions : W55 x D60 x H85 mm Weight : Approx. 150 g Power : Supplied from MPU-4D Power Unit</p>	<p style="text-align: center;">Rearing Sensor: MRS-110TX-RX</p> <p>Detection : Infrared Beam Beam-to-Beam Distance : 16 mm Number of Beam : 16 Dimensions : W280 x D30 x H30 mm</p> <p style="text-align: center;">Long-Term Test Cage Dimensions : W330 x D440 x H320 mm Weight : Approx. 4.5 kg</p>	<p>Number of Control Channel : 8 Indicator : LED (Comes on at rearing) Output : DI-064W, DI-032W, DI-016W, DI-008W, Open Collector for Printer Sampling Rate : 50 msec Dimensions : W300 x D250 x H80 mm Weight : Approx. 2.5 kg</p>
		

CPP Test Accessories

CPP Test Cage

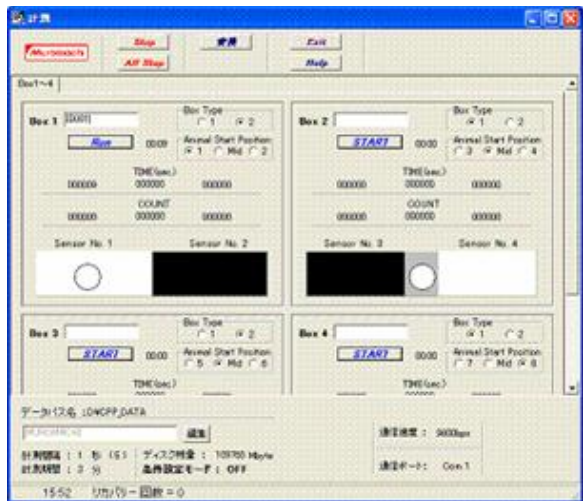


2 Compartment Test Cage



3 Compartment Test Cage

CompACT CPP



Ambulation and stay time in each chamber can be measured by CompACT CPP.

Specifications are subject to change without notice.