

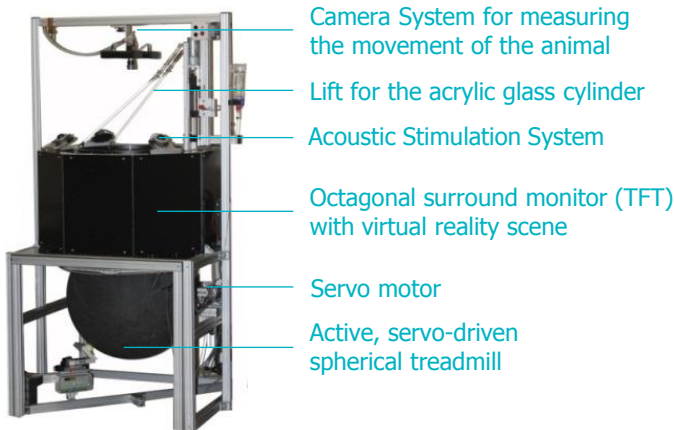
BACKGROUND

The Virtual Reality Servo Ball is a novel virtual reality experimental system. It is based on an active, servo driven spherical treadmill. It allows a video-tracked freely moving animal (e.g. mouse, rat) to navigate in virtual space. Virtual reality provides a perfectly controllable experimental environment.

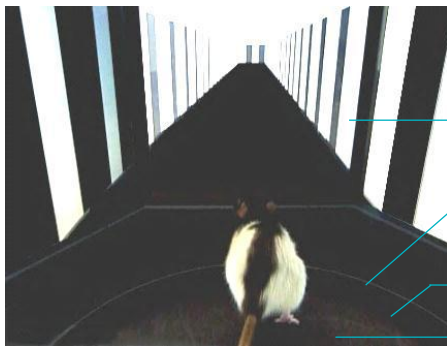
It can be used for investigating navigation, cognition, learning and memory.

A wide range of brain circuits can be stimulated through diverse operant protocols and multi-modal sensory stimulation. For unrestrained animals even 24-hour experimentation is possible.

SETUP



- Camera System for measuring the movement of the animal
- Lift for the acrylic glass cylinder
- Acoustic Stimulation System
- Octagonal surround monitor (TFT) with virtual reality scene
- Servo motor
- Active, servo-driven spherical treadmill



- Octagonal surround monitor (TFT) with virtual reality scene
- Acrylic glass cylinder and frame: keeps the animal on the treadmill
- Retractable operant device
- Active, servo-driven spherical treadmill

APPLICATIONS

- Virtual reality navigation
- Operant conditioning
- Learning and memory processes
- Pharmacology in any type of maze or operant environment
- Cellular dynamics during active navigation

KEY FUNCTIONS

- Freely moving animal
- Standard mazes or customized virtual reality scenes
- Octagonal 360° surround monitor (TFT)
- 600mm ball

OPTIONS

- Eight retractable operant devices with positive (water) and negative (air puff) reinforcement
- Fully automated by ID-Sorter for connection to group home cage
- Sensory stimulation: 3D sound system, fast-response odour generator, tactile stimulator