

GEMINI™ AVOIDANCE SYSTEM



Gemini Avoidance System Shock & Airstim Model

Features & Benefits

- » Cues include non-heating LED house lights, laboratory standard cue lights, user selectable auditory stimuli and quiet auto door.
- » Two unconditioned stimulus available, shock or air puff
- » Optional mouse start box for passive avoidance shrinks the chamber size to keep the mouse focused on the center auto-door.
- » Optional mouse shock box, with metal walls, shrinks the chamber size and prevents mouse from escaping the shock.
- » Configure up to 8 stations for rapid testing of subjects.
- » Gate opens in 500 milliseconds.
- » Independent station start makes continuous testing quick and easy.
- » Ability to run the system on a laptop or a desktop.
- » Easy-to-use, menu based software assures reliable and accurate data.
- » All study data are stored in a database, providing quick and easy export.

PRODUCT OVERVIEW

The GEMINI Avoidance System is purposely designed for active and passive avoidance and learned helplessness testing in both rats and mice. GEMINI is available in two configurations: Shock or Shock and Airstim. On the Shock model, shock is used for the Unconditioned Stimulus. On the Shock and Airstim model, the user can choose shock or air puff for the Unconditioned Stimulus. Shock uses a scrambled delivery to the rods of the floor preventing the animal from discerning a pattern. The Air Puff is delivered through tubes with multiple outlets spanning the length of each compartment. The tubes are mounted both in the front and back of the compartment. The animal will receive the air puff from both sides. Conversion from rats to mice or mice to rats is possible in less than five minutes. GEMINI provides maximum flexibility in test paradigms by allowing the use of one or more stimuli simultaneously. A key feature is the very silent center Auto-Door which will not induce unwanted behaviors. It also lowers by gravity alone so no animal can be injured.

GEMINI can be configured with up to 8 stations for testing large subject groups. Each station starts and runs independently making continuous testing quick and easy. Supported avoidance paradigms are, Passive Avoidance (Classic, Trials to Criterion, Continuous), Active Avoidance (Trials to Criterion, Continuous) and Learned Helplessness. GEMINI utilizes a database to store all study results in a single file in table format ready for export. This eliminates the need to cut and paste multiple files together before exporting study results to statistical packages.

GEMINI System Components

The GEMINI Avoidance System includes the following:

- › Software for Active and Passive Avoidance and Learned Helplessness
- › Test stations with 2 compartment enclosures and grid floor for rats (or mice), 16 photobeams, 2 “house” and 2 “cue” lights and 2 speakers for sound
- › Connection to computer sound card
- › SDI Animal Shocker with 8 unique outputs
- › Auto door (for passive avoidance testing)
- › USB Interface
- › All necessary cables and power supply

GEMINI Components & Accessories (optional)

- › Mouse passive avoidance start box
- › Mouse Shock Box
- › Additional Grid floors (for rats or mice)
- › Isolation Cabinet

Additional GEMINI Test Stations match the system test station but do not include software.

GEMINI SOFTWARE

GEMINI's easy to use menu-based software offers both passive avoidance (Classic, Trials to Criterion, continuous) and active avoidance (Trials to Criterion, Continuous) and Learned Helplessness, full test diagnostics, runtime data display and a fully formatted report. The GEMINI data is stored in a Microsoft® Access data base for easy transfer to other statistical programs.

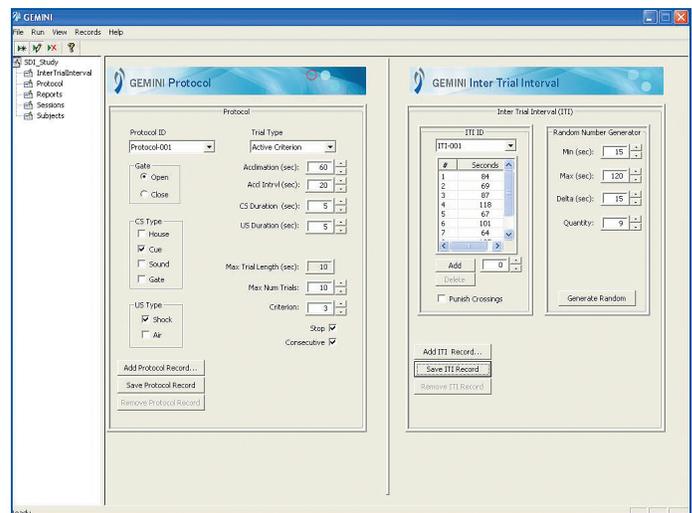
USER DEFINABLE PROTOCOLS

Passive Avoidance

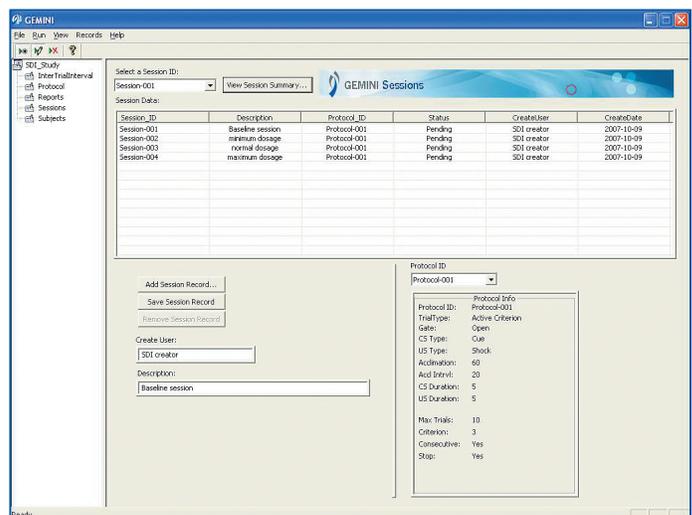
Test parameters include subject identifiers, length of acclimation period, CS selection (house light, cue light, sound or any combination), CS duration, US selection (SHOCK and AIRSTIM model), US duration and optional US delay (a delay time after the Auto Door closes before the US is administered). The three protocols supported use the Auto-Door. They are Classic (single trial), Trials to Criterion (shuttles the subject back and forth until the subject meets the criterion set by the user, a Maximum Trials parameter is also set), and Continuous (shuttles the subject back and forth until the trials equal the Maximum Trials parameter). On Trials to Criterion and Continuous an Inter-Trial interval table is set up to rest the subject before starting the next trial. The software handles both a cross and no cross by locating the subject and determining the correct start compartment for the next trial. Scoring is the latency to cross or no response if no crossing.

Active Avoidance

Test parameters include subject identifiers, length of acclimation period, CS selection (house light, cue light, sound, auto-door or any combination), CS duration, US selection (SHOCK and AIRSTIM model), US duration. Protocols supported are Trials to Criterion (shuttles the subject back and forth until the subject meets the criterion set by the user, a Maximum Trials parameter is also set), and Continuous (shuttles the subject back and forth until the trials equal the Maximum Trials parameter).



GEMINI Protocol Display



GEMINI Sessions Display

The software handles both a cross and no cross by locating the subject and determining the correct start compartment for the next trial.

On Trials to Criterion and Continuous an Inter-Trial interval table is set up to rest the subject before starting the next trial. Scoring is latency to cross applied as follows: Avoidance (crossed during CS), Escaped (crossed during US) and No Response (did not cross).

Learned Helplessness

Learned Helplessness (Non-Contingent Sequential Stimuli) permits the application of a timed series of CS (conditioned stimuli) and U (Unconditioned stimuli) called a CS-US Cycle. The gate is closed and a subject can be placed in both the right and left compartment allowing preconditioning of two subjects at a time. The user defines a CS-US Cycle (CS and US types and durations) and sets the maximum number of trials. An Inter-Trial interval table is set up to rest the subject before starting the next trial. At the completion of the preconditioning the subject is tested using Active Avoidance to see if the subject will cross.

GEMINI™ SPECIFICATIONS

Dimensions Outside:	26" (W) x 13" (D) x 17.25" (H)	Inside: 9.5" (W) x 8" (D) x 8" (H) (each side)
Weight	35 lbs.	
Material Composition	Acrylic and aluminum, stainless steel (Gate)	
Maximum # Stations	8	
# of Photobeams	16 infrared per enclosure	
Photobeam Spacing	1"	
Standard Cable Length	8 feet	
Certifications	CE	
Stimuli Options	Cue lights, house lights, sound, shock, gate	
Color Options	Black	
Stainless Steel Grids	28 for rats, 62 for mice	

GEMINI COMPUTER REQUIREMENTS

Windows 7/Windows 10 compatible computer systems with one USB port. Minimum disk and memory sizes specified to support Windows 7/Windows 10 are acceptable.

SDI CONFIGURED COMPUTERS

SDI offers high performance Configured Computers that are pre-installed with the Windows® operating system, USB Drivers and applicable SDI software. Each computer is fully tested with your system prior to shipment. When your SDI system arrives, all you have to do is unpack it, attach the cables and begin testing.

SDI LEARNING TEST SYSTEMS

- › Barnes Maze
- › Water Maze
- › Freeze Monitor™
- › GEMINI™

FOR MORE INFORMATION

To learn more about SDI behavioral testing systems, please visit www.sandiegoinstruments.com. If you have any questions or would like to request a quote please call (858) 530-2600 or email us at sales@sandiegoinstruments.com.



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