



Revolutionizing
Behavior Research



CylinderScan

CylinderScan is a component of our NeurodegenScan Suite. Cylinder test, or limb-use-asymmetry test, records and analyzes the extent of forelimb-use asymmetry displayed by the animal during exploration of the cylinder walls and for landings after a rearing movement. This test is useful in analyzing neurodegenerative disease models such as Parkinson's, ALS, Alzheimer's, stroke, etc.

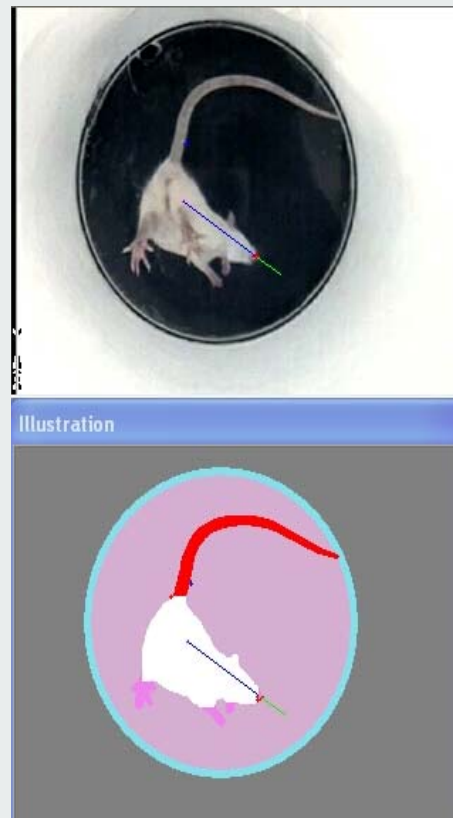
CylinderScan can automatically detect and analyze from appropriately taken video: (1) percentage of use of the non-impaired forelimb relative to the total of number of limb-use movements, (2) the percentage of use of the impaired forelimb relative to the total number of limb-use movements, (3) the percentage of co-use of both limbs relative to the total number of limb-use movements. Additional parameters are being developed.

Features:

- Complete Limb Function Analysis software
- Software tool designed for a special cylinder
- May be applicable in other arenas
- Exports conveniently to Excel, formatted for input into Stats packages
- Lists all samples collected per animal and their simple statistics
- Statistics can be exported across Groups of animals
- Automatic Graphing of Gait Patterns included in Export
- Software is trainable to adapt to changing environment
- Result review, Visualization of Acquired Experiments
- Extensive Experiment Database Management included!
- Batch-mode allows user to run multiple videos successively without human intervention

Measures CylinderScan can provide:

- Fore-limb touch on wall
- Hind-limb contact with floor
- Left vs. Right



CylinderScan has been developed for a specially designed cylinder by Clever Sys, Inc. This cylinder is designed to facilitate data collection in an appropriate manner. Depending on the types of data that the user needs, other cylinders may be used.



CylinderScan

(Continued from front)

Applications:

- Spinal Cord Injury
- Parkinson's Disease
- Alzheimer's Disease
- ALS
- Arthritis
- Pain
- Neuromuscular diseases
- Skeletal muscle diseases

Results:

- Objective Limb-use Analysis Results
- Automatic Export to MS Excel
- Complete Experiment Database Management
- Full-list of all samples collected per animal, as well as, summary data for each set of measures output clearly to a separate sheet in an Excel file.
- Group Export available that allows multiple animals' data to be exported to a single Excel sheet allowing easy Group or sub-group analysis

Requirements:

- Windows-based PC
- Intel High-speed Processor
- Special Videocard for realtime analysis
- Large HDD space for storage
- Good lighting conditions
- IR-switchable camera or red-light for night
- Video-multiplexer for multi-camera feed

CylinderScan outputs the detailed results from the analysis into Microsoft Excel files and gives statistical results to meet requirements in the research.

All components of TopScan can be applied to achieve high throughput screening as well. System architecture for high throughput screening has been designed that involves analysis of up to 4 cylinders on a system. The High-Throughput product option is necessary to analyze more than a single cylinder simultaneously. The Realtime Option is necessary to perform realtime analysis where the live video feed into the computer is compressed, encoded, saved to the hard drive while simultaneously full analysis of the video is performed.

Many advanced features are incorporated, including supporting full color analysis, automatic adaptation to non-uniform or changing environment, automated handling of light/dark areas, variable speed playback of specific video segment for specific detected behavior, etc. Advanced functionalities such as batch mode analysis and group export of results are available.

Complete Turn-key systems including all necessary Hardware and Software are available. Custom design of your environment to facilitate analysis, including lighting condition setup, IR/red light setup, cage enclosures, video integration, and video-feed to computer is also available.

Unique Capabilities:

- Complete Hardware and Software Solution
- Analyzes 640x480 at 30 frames per sec
- Detects animals in low contrast also!
- Detects feet in animals with almost similar coat color like Agouti and White mice!
- Works with rodents of all colors/sizes
- Stores video in MPEG with high-compression for optimal use of disk space
- Controls other hardware devices via I/O ports
- Records video into storage during analysis