



# CASA II Sperm Motility Software

## Animal Breeders II - Version 1.13

### Data Input

Analysis Info:	Animal Species	Animal ID
	Genetic Line	Ejaculate #
	Batch #	Volume (manually or by scale)
	Sample: Extender	
	Collection Technician	
	Lab Technician	
Dose Info:	Sperm / Dose (M/ml or B/ml)	
	Dose Volume (ml)	
	Usable Volume (ml)	
Notes:	User-defined	
Data Fields:	25 User-Defined Labels/Fields	

### Analysis Results

Counts:	Total, Motile, Static, Progressive, Slow
Percentages:	Total, Motile, Static, Progressive, Slow (%)
Concentrations:	Total, Motile, Static, Progressive, Slow (M/ml or B/ml)
Sample:	Total, Motile, Static, Progressive, Slow (M or B)
Kinematic Values:	VAP, VCL, VSL, ALH, BCF, LIN, STR, DAP, DCL, DSL, WOB, Elongation (head shape) and Area (head size). Includes mean, standard deviations and median.
Adjustments:	Total, Motile or Progressive
Morph:	Normal, Bent Tail, Coiled Tail, DMR, Distal Droplet, Proximal Droplet
	Select which to include in dose adjustment
Processing:	Extender Volume
	Final Volume
	Adjusted Concentration
	Number of Doses
	Useful Sperm
Pie Charts:	Percent of Total (motile vs. static)
	Velocity Percent of Motile

### Live Setup Configuration

Illumination:	Interactive illumination setting
	Histogram showing real-time feedback
Motility Setup:	Interactive sperm identification setup
	Automatic minimum tail brightness based on Photometer Offset
	Minimum head and tail brightness
	Minimum and maximum head size and head elongation
	Real-time feedback through color overlays

### Quality Control

Auto Illumination:	One Shot and Auto on Field Change (IVOS II only)
Illumination Check:	Quick view to confirm illumination and focus
Illumination Status:	Acceptable / Unacceptable
Video Playback:	Color-coded labeling of motile, progressive and static cells
Static Tail Filter:	Automatic elimination of debris

### Video Playback

Full Field:	Frame-by-frame playback
	Analysis results for selected field
	Turn on/off motility and morphology overlays
	Save TIFF image of individual frames
	Export fields as .mp4 files for presentation purposes only
Zoom Cell:	Frame-by-frame playback
	Analysis results for selected sperm
	Data point coordinates
	Cell classifications
	Turn on/off motility and morphology overlays
	Save TIFF image of individual frames
	Save individual cell data to ASCII
	Save data points to ASCII file

### Security

HT User Groups:	Administrative or Basic user
Password Security:	Windows-based Users
	Unlimited User IDs and passwords
Setup Access:	Analysis Setups restricted to Administrator users only

### Included Data Management Options

ASCII Export:	Transfer of summary data and/or individual track to ASCII compatible spreadsheet or database programs
Video Storage:	Ability to save video file of each field analyzed, along with sample information and analysis setup values.
	Recall and analyze video with saved settings or new settings
	Re-analyze single videos or entire analysis sets
Report Viewer:	View analysis data in report format
Report Designer:	Report designer and manager to create unlimited professional reports from sperm analysis results. Ability to include all data (calculated and user input), images, and logo. Drag and drop design, snap-to alignment. Ability to combine results from two analyses from same Animal ID into a single report.

### Optional Special Applications

Sort:	Segments sperm into sub-populations based on kinematic and/or morphometric parameters
Edit Tracks:	Save individual track data to ASCII output plus ability to manually delete tracks from cell population
IDENT:	(IVOS II Only) Automated motility analysis of high-detritus samples using DNA-specific, fluorescent stain and integrated fluorescent illumination.
VIADENT:	(IVOS II Only) Sperm viability assessment software option. Stain sperm with non-membrane permeable DNA stain and calculate viable sperm numbers under fluorescence (requires IDENT option)

**Analysis Sets:** Unlimited, User-defined by administrator

### Analysis Setup Parameters (Administrative Users Only)

(Setup):	Setup Name	
Analysis Limits:	Min Motility Percent	Min Progressive Percent
	Min Total Count	
Calibration:	Objective Name	
	X-axis Magnification	Y-axis Magnification
Camera:	Exposure (Ms)	Gain
	Integrate Enabled	Integrate Time (Ms)
Cell Detection:	Elongation Max (%)	Enable Advanced Tail Detection
	Elongation Min (%)	Enable Background Subtraction
	Head Brightness Min	Head Size Max (µm <sup>2</sup> )
	Head Size Min (µm <sup>2</sup> )	Static Tail Filter
	Tail Brightness Min	Tail Min Brightness Auto Offset
	Tail Min Brightness Mode	
Chamber:	Capillary Correction	
	Chamber Depth (µm)	
	Chamber Type (Capillary, Drop)	
Illumination:	Illumination Primary (IVOS II only)	
	Max Photometer	
	Min Photometer	
Kinematics:	Cell Travel Max (µm)	Slow VAP (µm/s)
	Enable Motile Static Collisions Avoidance	Slow VSL (µm/s)
	Motile Cell Require Tail	Static Algorithm
	Motile Require Tails Max VSL (µm/s)	Static VAP (µm/s)
	Progressive STR (%)	Static VSL (µm/s)
	Progressive VAP (µm/s)	Static Width Multiplier
Morph:	DMR Confidence (%)	
	DMR Droplet to tail end Max (µm)	
	DMR Tail Length Max (µm)	
	Droplet Confidence (%)	
	Droplet Distal Distance Min (µm)	
	Droplet Proximal Head Length (µm)	
	Min Tail Length (µm)	
	Morph Normal Minimum Percent (%)	
	Tail Bend Angle Averaging Length (µm)	
	Tail Bending Angle Rate Min (°/µm)	
	Tail Bent Confidence (%)	
	Tail Coiled Angle Min (°)	
	Tail Coiled Confidence (%)	
	Tail Confidence (%)	
	Viadent:	Viadent Fluorescing System
Video Capture:	Frame Capture Speed (Hz)	
	Frame Count	

*Specifications subject to change without notice*