

# UltiMate Sperm Analyzer for Swine

## Version 14 System Specifications



HAMILTON THORNE BIOSCIENCES

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Dimensions	H	W	D	
	in. (mm)	in. (mm)	in. (mm)	lb. (kg)
UltiMate	11.1 (282)	20.3 (515)	19.3 (490)	53 (24.1)
Monitor	16.9 (429)	16.7 (424)	7.9 (200)	17.0 (7.7)

Electrical	UltiMate	Monitor
Input Voltage:	110-240 VAC	110-240 VAC
Power:	160 watt	200 watt
Line Frequency:	50/60 Hz	50/60 Hz

### Heated Stage

Temperature Control:	Room Temperature to 45°C
<i>Optional:</i>	10°C to 45°C
Temperature stepsize:	0.1°C
Temperature stability:	0.5°C
Stage Position:	Programmable for 2 and 4 chamber

### Specimen Chambers

Disposable Slide:	20 micron deep, 2 or 4 chamber
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### Internal Optical System

Imaging Device:	High Resolution CCD array (non-IDENT) <i>IDENT Option:</i> Integrated High Resolution CCD array for low intensity fluorescent sample imaging
Objective:	Standard: 10x, 20x <i>Optional:</i> 4x, 40x, 60x, 100x
Image Type:	Dark field Negative Phase Contrast
Signal Output:	NTSC, RS-170 60 Hz <i>optional:</i> PAL, CCIR 50 Hz

### Video Capability

Analyze both 50 Hz (PAL) and 60 Hz (NTSC)

### Illumination System

<i>Stroboscopic light source</i>	
Photometer:	Scale on screen
Exposure:	Source on only during acquisition and focus
Pulse:	1 - 3 millisecond
Intensity:	Computer controlled

### Digital Image Acquisition

Frame Rate:	60, 30, 15, 7.5 Hz <i>[optional: 50, 25, 12.5, 6.25 Hz]</i>
Frames:	Min. 5, Max. 100
Field Selection:	1 - 20, Automatic or Manually Selected

### Analyzing System

Input Signal:	NTSC, RS-170 [ <i>optional:</i> PAL, CCIR]
Image Resolution:	640 x 480
Control:	Mouse, Keyboard [ <i>optional:</i> Touchscreen]
Analysis Time:	<5 seconds for 200 cells
Software:	On Hard Disk: Updates on Diskette, CD-ROM

### Data Input

Standard:	Keyboard
	Barcode Reader
	Electronic Scale (for ejaculate volume)

**Data Output:** Floppy Drive, External CD-RW Drive, Network, HDATA ASCII, Swine Report Filing, Printer (*not included*)

### Standard Swine Software

Counts:	Total, Motile, Progressive % Motile, % Progressively Motile Rapid, Medium, Slow and Static Cells
Concentrations:	Total, Motile, Progressive (millions/ml) Rapid, Medium, Slow and Static Cells
Dose Calculations:	Final Extension Required Number of Doses per Ejaculate
Mean Values:	<b>VAP, VCL, VSL, ALH, BCF, LIN, STR, Elongation (head shape) and Area (head size).</b> Includes standard deviations.
Distributions:	<b>VAP, VCL, VSL, Elongation, ALH, BCF, LIN, STR</b>
Quality Control:	<i>4 Levels:</i> Video Playback, QC by Size, Intensity, Elongation
Analysis Sets:	7 User-defined

### Security

Password Security:	3 Levels Analysis Setup access 99 unique User IDs and passwords Electronic signatures
Audit Trail:	Log file of user actions
Timer:	Automatic log-off after system is idle for designated number of minutes

### Special Applications - Included

*Real Time Morphology:* Provides capability for users to visualize and manually classify sperm based on gross morphology of head, droplets and tail. Automatic calculation of adjustment factor.  
*HDATA ASCII Export:* Transfer of summary data and/or individual track to ASCII compatible spreadsheet or database programs. Creates link to LAN.  
*Swine Report Filing:* Provides ability to design three one-page custom reports and to store analysis reports to file.

### Special Applications - Optional

*Sort Function:* Determines fraction of cells within user-specified limits.  
*Track Editing:* View and store detailed data for individual sperm.  
*Metric:* Swine morphology program for detailed, objective, standardized, automated analysis of head, acrosome, midpiece, droplets and tail defects. Full review and edit capability.  
*Digital Image Storage:* Allows storage and retrieval of exact fields analyzed. Includes add on program to convert saved video files to industry standard avi or wmv.  
*IDENT:* Automated motility analysis using DNA-specific, fluorescent stain and integrated fluorescent illumination.  
*VIADENT:* Sperm viability assessment software option. Stain sperm with non-membrane permeable DNA stain and calculate viable sperm numbers under fluorescence (requires IDENT option)  
*Heat Probe: (hardware)* On-stage sperm immobilizer unit for use with Real-time Morphology

### UltiMate Computer System (specifications subject to change)

Operating System:	Windows 7
Standard CPU:	2.8 GHz Pentium IV
RAM:	2 GB SDRAM
Ports:	2 serial, 1 parallel, 2 USB (V2.0 compliant)
Network:	10/100 LAN - Ethernet NIC
Floppy Drive:	1.44 MB 3.5" High Density
Hard Drive:	320 Gigabytes ( <i>back up hard drives optional</i> )
Monitor:	20" Flat Panel UXGA
CD/DVD Drive:	CD/DVD ± RW DL