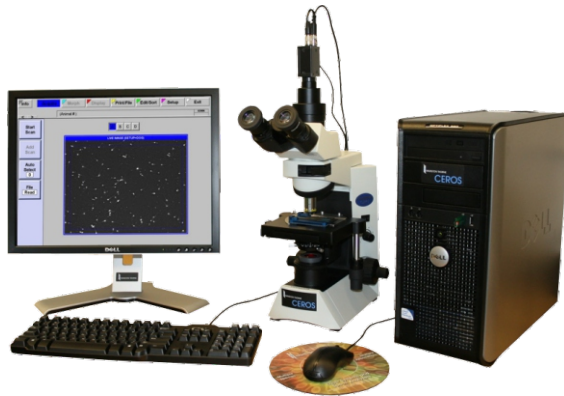


EQUINE BREEDERS

Version 14 HTM-CEROS Sperm Analysis System Specifications



100 Cummings Center, Suite 465E, Beverly MA 01915
978.921.2050, 800.323.0503, Fax: 978.921.0250
www.hamiltonthorne.com, sales@hamiltonthorne.com



The standard CEROS system includes the CEROS analyzer, CCD camera, negative phase contrast microscope, monitor, keyboard, mouse, and standard Clinical analysis software.

Dimensions	H	W	D	
	in. (mm)	in. (mm)	in. (mm)	lb. (kg)
CEROS:	14.2 (361)	7.1 (180)	17.4 (442)	38 (17.3)
Monitor:	16.9 (429)	16.7 (424)	7.9 (200)	17.0 (7.7)
Microscope:	16.8 (428)	11.1 (283)	12.8 (326)	

Electrical	CEROS	Monitor
Input Voltage:	110-240 VAC	110-240 VAC
Power:	250 watt	95 watt
Line Frequency:	50/60 Hz	50/60 Hz

Specimen Chambers

Cannula:	100, 200 micron
Slide:	20, 50 micron
User Defined	Programmable

Optical System

Imaging Device:	High Resolution B&W CCD array 120 or 240 VAC
Microscope:	Olympus CX41 Negative Phase Contrast C-Mount Adapter Objective: 10x Negative High Phase Contrast MiniTherm Stage Warmer
Image Type:	Phase Contrast, negative and positive Dark field, Bright field
Signal Output:	NTSC, RS-170 60 Hz <i>optional: PAL, CCIR 50 Hz</i>
Magnification:	Set by User
Illumination:	Set by User
Photometer:	Scale on Screen

Analyzing System

Input Signal:	NTSC, RS-170 [<i>optional: PAL, CCIR</i>]
Image Resolution:	640 x 480
Control:	Mouse, Keyboard [<i>optional: Touchscreen</i>]
Analysis Time:	<5 seconds for 200 cells
Software:	On Hard Disk: Updates on Diskette, CD-ROM
Quality Control:	4 Levels: <i>Video Playback, QC by Size, Intensity, Elongation</i>
Analysis Sets:	7 User-defined

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
Fields:	1 - 20
Designation:	Manually Selected

Standard Equine Breeders 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:	<i>for Total and Progressive Dilution Methods</i> Dilution Factor, Dose Volume, Number of Doses, Volume Ejaculate per Dose, Volume Diluent per Dose
Mean Values:	VAP, VCL, VSL, ALH, BCF, LIN, STR, Elongation (head shape) and Area (head size). Includes standard deviations.
Distributions:	VAP, VCL, VSL, Elongation, ALH, BCF, LIN, STR
Graphics:	Distribution Bar Charts Color coded tracks, Plots

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

Included Special Applications

HDATA ASCII Export: Transfer of summary data and/or individual track to ASCII compatible spreadsheet or database programs.
HT InScribe: Custom report designer and manager. Design unlimited reports. Ability to import images.
Motility 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.

Optional Special Applications

Sort Function: Determines fraction of cells within user-specified limits on: **VCL, VSL, VAP, LIN, STR, ALH, BCF, Head Size, and Elongation.**
Track Editing: View and store detailed data for individual sperm tracks. Used for validation procedures.
Metrix: Interactive, user-defined morphology program applicable to human and other species.
Real Time Morphology: Provides capability for users to visualize and manually classify sperm based on gross morphology of head, droplets and tail.

CEROS Computer System (subject to changes)

OS:	Windows 7
CPU:	Pentium Dual Core 3 GHz or Core i5
Memory:	2 GB DDR
Drives:	250 GB HD CD/DVD-RW Dual Layer
Display:	20" flat panel, UXGA
Ports:	Serial, Parallel, USB 2.0, PS/2
Network:	10/100/1000 Ethernet