



HAMILTON THORNE

IVOS II & CEROS II



Featuring Next Generation
Human Clinical II
Sperm Motility Software

Currently undergoing conformity assessment.

Proven & Trusted Sperm Analysis

With the proven performance of our sperm analyzers and our respected standing in the industry, you can trust in both your sperm analysis results and our dedication to your success. To meet your specific needs, we offer two analyzer models, the IVOS® and the CEROS™, to the assisted reproduction, andrology and pathology laboratories.

Our sperm analyzers provide:

- Accurate, objective and repeatable results
- Intuitive software interface for ease of operation
- Rapid analysis - 1/2 second per analysis field (30 frames @ 60Hz)
- Compatibility with reusable and disposable analysis chambers
- Real-time quality control through interactive illumination settings
- Labor savings
- High level data security

Detailed analysis results include:

- Counts & Concentrations
- Motility, Progressive Motility, Velocities and Kinematic Measures
- Direct WHO comparisons with simple switch between WHO 4th or 5th editions

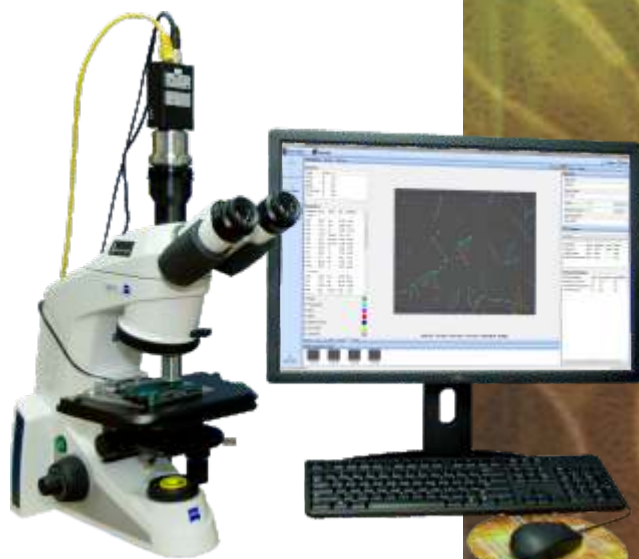


IVOS®

- Automation for speed, increased precision and decreased technical variation
- Pre-selection of fields for fastest analysis
- All optics components combined into one integrated unit - the microscope is inside!
- Strobe illumination provides sharpest imaging
- Automated stage for precise temperature control and sample positioning
- Optional IDENT fluorescence capability

CEROS™

- External negative phase contrast microscope (included) saves space - computer can be stored under the lab bench
- Familiar, standard microscope illumination
- Portable MiniTherm Stage Warmer maintains samples at 37°C
- X-Y stage movement increases number of fields available for motility and morphology analyses



ALL NEW Human Clinical II sperm motility software for infertility clinics and assisted reproduction centers

What is New?

- Completely redesigned graphical user interface based on standard Windows® conventions
- Language localization - available in English, Russian, Chinese and Spanish (with more language translations to follow)
- Color-coded, interactive illumination setting for best accuracy in sperm head and tail identification
- Easily switch between W.H.O. 4 and W.H.O. 5 comparisons
- Thumbnail image gallery of all fields analyzed, with ability view video playback of every field analyzed and to remove selected fields from the analysis
- Additional kinematic outputs: Distance of Average Path (DAP), Straight Line Distance (DSL), Curvilinear Distance (DCL) and Wobble (WOB)
- View summary, field and individual cell results along side the analyzed image
- Tabbed data input and results panels
- Option to turn on/off field and cell results and motility overlay
- Built-in database with customized reports (report designer optional)
- Unlimited storage of pre-defined analysis setups

IVOS HARDWARE ENHANCEMENTS

- Smoother, faster integrated stage featuring acceleration and deceleration. Thanks to a new stage drive motor, the IVOS stage now can move from maximum speed down to start speed in the blink of an eye.
- High speed digital camera provides excellent image quality and allows seamless image capture and playback
- A rearrangement of user controls and the addition of inputs on the IVOS front panel make for a better user experience:
 - On / Off switch added to the front panel
 - Stage LOAD button separated from the JOG buttons to avoid inadvertent stage loading/unloading.
 - Four high speed USB 2.0 ports for easy data transfer and connection to external devices

CEROS HARDWARE ENHANCEMENTS

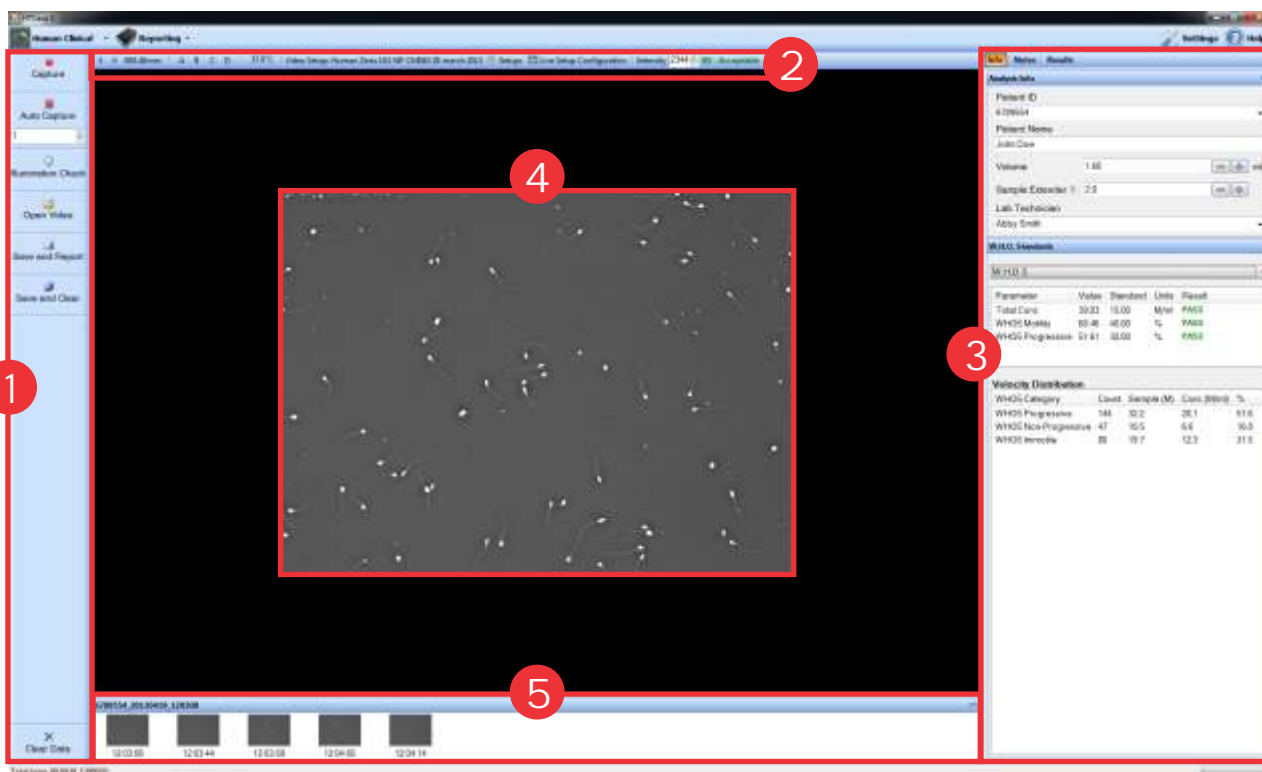
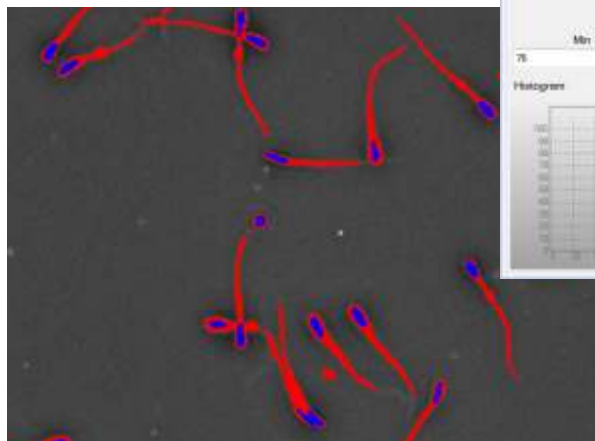
- High speed digital camera provides excellent image quality and allows seamless image capture and playback
- Choice of Olympus Cx41 or Zeiss Axio Lab.A1 microscope with 10x negative phase contrast objective
- High definition, 23", 1920 x 1080 wide screen monitor, wireless keyboard and wireless mouse



Software Overview

Interactive Illumination Check

Human Clinical II sperm motility software features the unique color-coded Illumination Check to optimize identification of the sperm head and sperm tail. This feature removes any guess work in setting the illumination and promotes consistency between all users. When the microscope illumination is set correctly, the sperm heads will show a blue color and tails will be red.



- 1 Controls for initiating analysis, checking illumination, saving, printing and clearing data, and opening saved video files.
- 2 Quick selection of analysis setup to be used and access to various system hardware and software settings.
- 3 Tabbed menu panels for input of Analysis Info and Notes, plus output of W.H.O. Standards and Summary and Kinematic Results, updated in real-time.
- 4 Live image area, display of Calibration Check, full screen playback images, and zoomed individual cell images.
- 5 Thumbnail gallery for storage of captured video images, which may be played back individually for quality control.



Analysis Results

Real-time Updating

Data in the Results panel on the right side of the screen reflect the entire population of cells analyzed. W.H.O. Standards and Analysis results are updated in real-time as each field is added to the analysis.

Full Field Playback

Selecting a thumbnail image from the gallery opens the captured video. The video may be replayed in full or you may scroll through frame by frame. The results along the left side of the image represent only the analysis data of selected field. The color-overlays on the playback image and the results may be turned on or off.

Zoom Cell Playback

Selecting a track from the playback image opens up a zoomed image of the cell. The Kinematic Measures shown on the left are relative only to the selected track. The video focusing on the individual cell may be played or scrolled through frame by frame. You may jump to a specific frame by selecting a point on the track or the associated data points. Both motile and static cells may be selected.

Saving & Recalling Video

For every analysis, you may choose to save the complete video image of each field analyzed. Each field is saved with all set up parameters and patient information. When opening saved videos, you may re-analyze with the saved settings or apply a new set of parameters.

Results

Summary

Class	Count	Sample (M)	Conc (M/ml)	%
Total	279	39.0	39.0	100
Static	104	14.5	14.5	37.3
Motile	175	24.5	24.5	62.7
Progressive	78	10.9	10.9	28
Slow	63	8.8	8.8	22.6

Kinematics

Measure	Avg	Units	SD	Median
Motile				
DAP	63.77	µm	30.98	61.83
DSL	54.55	µm	32.85	54.2
DCL	117.64	µm	53.67	119.32
VAP	42.1	µm/sec	19.14	40.38
VSL	36.22	µm/sec	20.62	34.7
VCL	76.72	µm/sec	31.63	78.79
STR	77.72	%	23.45	87.53
LIN	43.14	%	17.38	44.41
ALH	5.78	µm	2.29	5.84
BCF	23.23	Hz	21.22	16.71
WOB	53.79	%	10.75	53.32
Slow				
DAP	37	µm	19.57	39.45
DSL	22.54	µm	17.15	21.4
DCL	75.35	µm	35.18	81.21
VAP	22.56	µm/sec	11.98	23.84
VSL	13.71	µm/sec	10.36	13.83
VCL	45.84	µm/sec	21.3	51.19
STR	52.92	%	22.98	55.94
LIN	26.08	%	13.54	24.33
ALH	4.46	µm	2.29	4.76
BCF	35.98	Hz	31.17	20.59
WOB	47.71	%	9.54	47.42

Velocity Distribution

WHOS Category	Count	Sample (M)	Conc (M/ml)
WHOS Progressive	144	32.2	20.1
WHOS Non-Progressive	29	6.5	4.1
WHOS Immobile	106	23.7	14.8

Reporting

Report Viewer

The Human Clinical II software includes the ability to view custom designed reports. The system will come with several pre-designed reports.

Report Designer

The optional Report Designer permits customization of the pre-designed forms or creation of entirely new forms. The user-friendly, "drag and drop" designer gives you complete control over the look and content of the report. Any input or output data may be added to the report. Free-form fields also allow the inclusion of non-analysis data such as contact information or company logo.

IVOS Components

- IVOS II unit featuring:
 - ▶ Integrated optics
 - ▶ High speed, computer controlled, heated stage
 - ▶ High resolution digital camera
 - ▶ 1 Terabyte 6.0 GB/sec 7200 RPM hard drive
 - ▶ DVD-RW/CD-RW/BD-R
 - ▶ Windows 7 Ultimate
- High definition, 23", 1920 x 1080 wide screen monitor, wireless keyboard and wireless mouse

CEROS Components

- Choice of Olympus Cx41 or Zeiss Axio Lab.A1 microscope with 10x negative phase contrast objective
- Monochrome digital camera, 60 frames/second with full resolution, 782 x 582 active pixels
- High speed PC with Windows 7 Ultimate
- High definition, 23", 1920 x 1080 wide screen monitor, wireless keyboard and wireless mouse
- Optional: MiniTherm Stage Warmer

Analysis Output

Counts:

Total, Static, Motile, Progressive, Slow

Sample:

Total, Static, Motile, Progressive, Slow
(Choice of million or billion)

Concentrations:

Total, Static, Motile, Progressive, Slow
(Choice of millions/ml or billions/ml)

Percentages:

%Total, %Static, %Motile, %Progressive, %Slow

W.H.O. Standards:

W.H.O. 4 & W.H.O 5 available
Total Concentration
Motility
Progressive
Velocity Distribution

Kinematic Measures:

DAP, DSL, DCL, VAP, VSL, VCL, ALH,
STR, LIN, BCF, WOB
(Average, SD, Median)

Morph Averages:

Head Length
Head Width
Head Perimeter
Head Area

Specifications subject to change.

Distributed by:



Innovations to Rely On

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