



IVOS[®] II & CEROS[™] II



**Featuring Next Generation
Human Clinical II
Sperm Motility Software**

US: Pending 510k. Not available for sale within United States.

Proven & Trusted Sperm Analysis

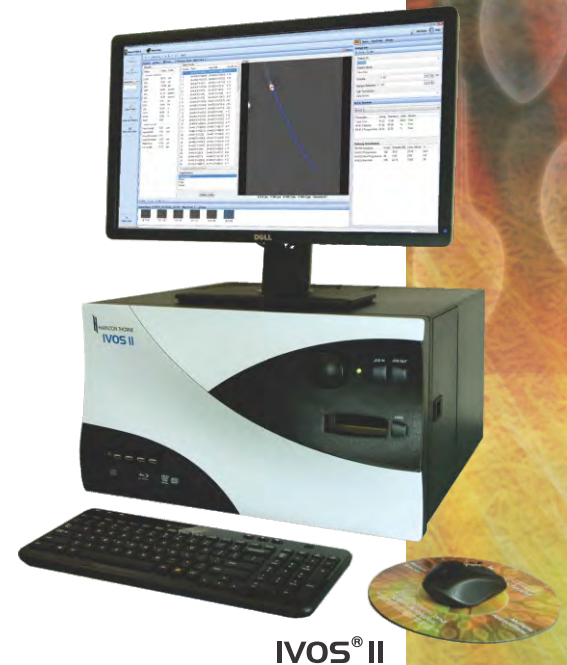
With the proven performance of our sperm analyzers and our respected standing in the industry, you can **trust in both your sperm analysis results and our dedication to your success**. To meet your specific needs, we offer two analyzer models, the IVOS[®] II and the CEROS[™] II, to the assisted reproduction,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

Our sperm analyzers provide:

- Accurate, objective and repeatable results
- Intuitive software interface for ease of operation
- Rapid analysis with automatic adjustment of minimum tail brightness for consistency across all analysis fields
- Compatibility with reusable and disposable analysis chambers
- Real-time quality control through interactive illumination settings
- Labor savings

Detailed analysis results include:

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

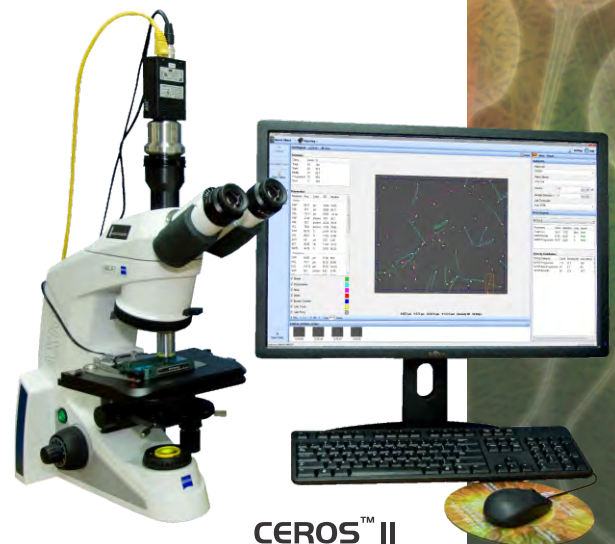


IVOS[®] II

- Automation for speed, increased precision and decreased technical variation
- Computer controlled auto-illumination standardizes analysis setup across all users
- Auto-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
- IDENT fluorescence capability (optional)

CEROS[™] II

- External negative phase contrast microscope (included)
- Choice of desktop computer with widescreen HD monitor or full HD laptop computer
- Familiar, standard microscope illumination
- Portable MiniTherm Stage Warmer (optional) 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, assisted reproduction centers & pathology laboratories

What is New?

- Completely redesigned graphical user interface based on standard Windows® conventions
- Language localization - available in English, Russian, Chinese, French and Spanish (with more language translations to follow)
- Color-coded, interactive illumination setting for best accuracy in sperm head and tail identification plus auto-illumination setting in IVOS II
- Tail recognition software filter eliminates false positive identification of debris as sperm
- Easily switch between WHO 4 and WHO 5 Standards
- Thumbnail image gallery of all fields analyzed, with ability to 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 alongside the analyzed image
- Tabbed data input and results panels
- Ability to turn on/off results display and color-coded graphic overlays on Field Playback screen and average cell path overlay on Zoomed Cell Playback screen
- Built-in database with easy-to-use Report Designer to create customized reports
- Unlimited storage of pre-defined analysis setups

IVOS® II Hardware Enhancements

- Smoother, faster integrated stage featuring acceleration and deceleration. Thanks to a new stage drive motor, the IVOS II 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 II front panel make for a better user experience:
 - ▶ On / Off switch added to the front panel and 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™ II Hardware Enhancements

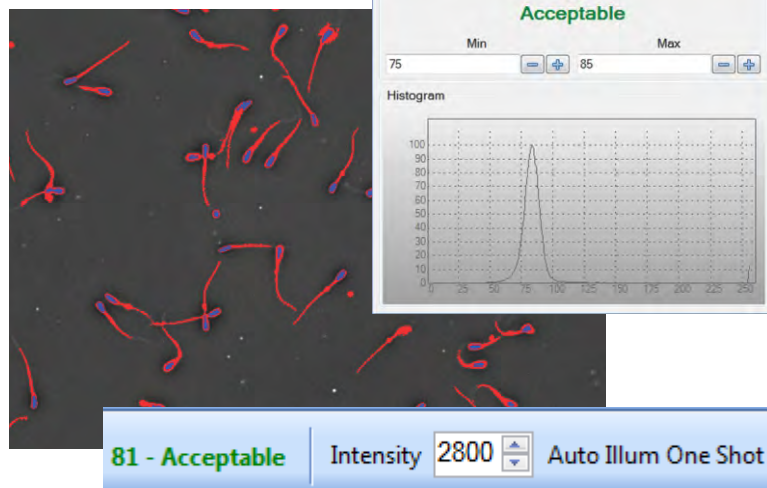
- High speed digital camera provides excellent image quality and allows seamless image capture and playback
- Choice of Olympus Cx41 or Zeiss Axio Lab.A1 microscope with 10x negative phase contrast objective
- High definition, 24", 1920 x 1200 LED backlit widescreen monitor



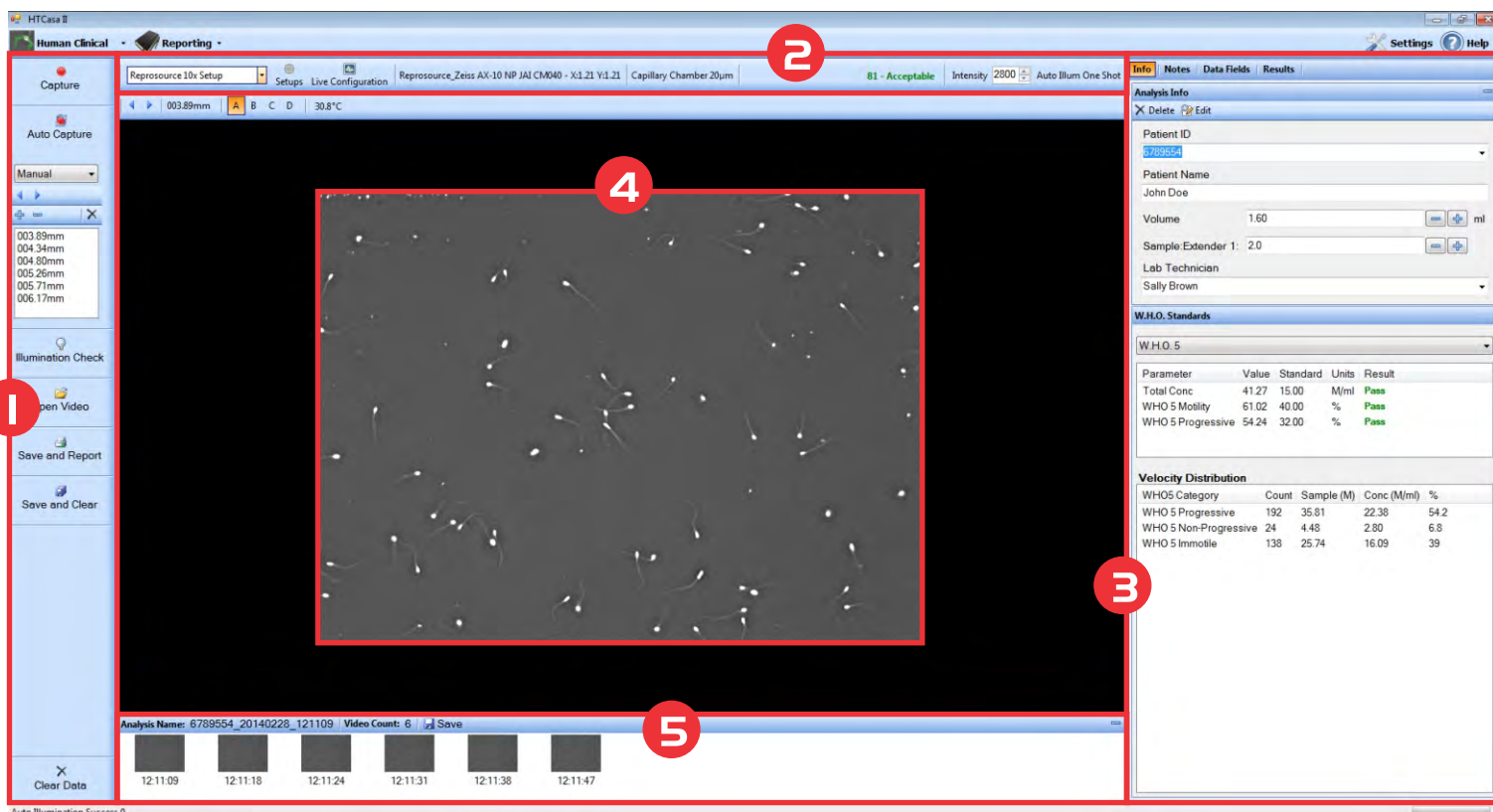
Software Overview

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, especially when used in tandem with the auto-illumination feature (IVOS II only). When the illumination is set correctly, the sperm heads will be colored blue and tails will be colored red.



Screen Layout



- 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, Notes, and custom Data Fields. Output of WHO Standards and Summary and Kinematic Results, updated in real-time.
- 4** Live image area, display of Illumination 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 QC.

Analysis Results

Real-time Updating

Data in the Results panel on the right side of the screen reflect the entire population of cells analyzed. WHO 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 field 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.

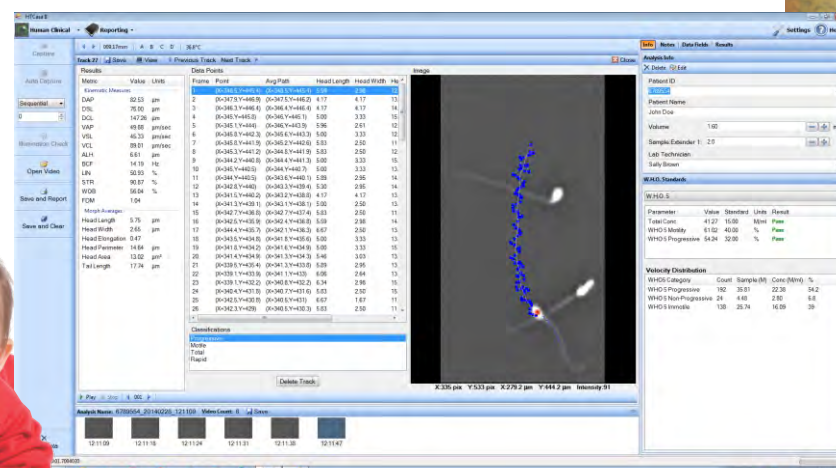
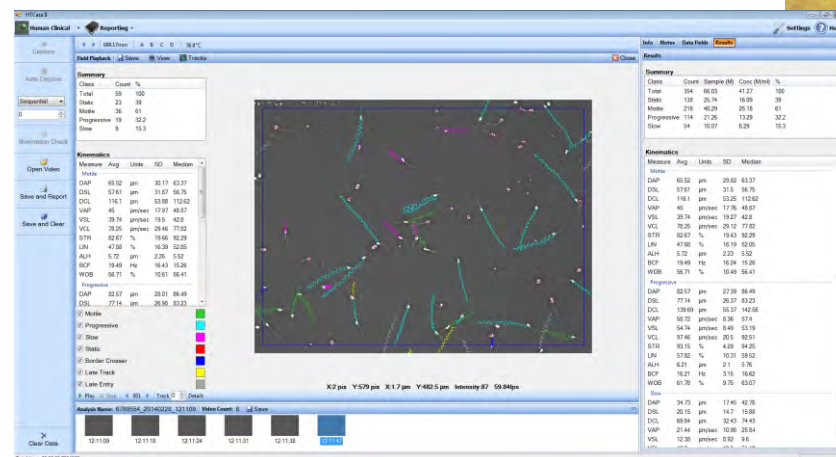
Saving & Recalling Video

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.



Info	Notes	Results
Analysis Info		
Patient ID	6789554	
Patient Name	John Doe	
Volume	1.60	
Sample Extender 1:	2.0	
Lab Technician	Abby Smith	
W.H.O. Standards		
W.H.O. 5		
Parameter	Value	Standard Units Result
Total Conc	39.03	15.00 M/ml PASS
WHO5 Motility	62.01	40.00 % PASS
WHO5 Progressive	51.61	32.00 % PASS
Velocity Distribution		
WHO5 Category	Count	Sample (M) Conc (M)
WHO5 Progressive	144	32.2 20.1
WHO5 Non-Progressive	29	6.5 4.1
WHO5 Immobile	106	23.7 14.8

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



Report Designer

The Report Designer lets you customize the pre-designed forms or create 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.

CASA II Options

Sort

The optional Sort feature provides the ability to isolate a certain sub-population of cells (i.e. hyper-activated cells) for analysis.

Three independent Sort sets are available. For each analysis performed, the software applies the enabled Sort sets separately to the cell population. The fraction of cells passing the sort criteria are calculated and presented under Analysis Results.

Edit Tracks

The Edit Tracks option provides the opportunity to save individual track data to an ASCII file for detailed statistical analysis. Edit Tracks also allows removal of tracks or individual cells from the analysis (manual elimination of false positive debris).

DIMENSIONS II

DIMENSIONS II offers automated and validated analysis of human sperm cells according to Tygerberg strict criteria. Focusing on ease of use, the redesigned DIMENSIONS II software works seamlessly with both the IVOS II and CEROS II platforms. DIMENSIONS II, compatible with both Diff-Quik and Papinicolaou stains, classifies sperm as normal, sub-normal or abnormal, based on head size and shape, acrosome, midpiece, and tail.

IVOS® II Options

IDENT Fluorescence

- The only CASA system with **strobed fluorescence illumination for sperm-safe motility**
- Choice of Xenon or new LED fluorescence illumination source
- Highest precision in sperm counting
- IDENT Stain permeates all sperm cells
- Analysis of both motile and static cells under fluorescence

VIADENT Software

- Requires IDENT Fluorescence
- Performs motility and viability on the same LIVE sample
- VIADENT Stain permeates only non-viable cells
- Motility analysis performed under standard illumination and viability analysis under fluorescence

Analysis Output

Counts, Sample, Concentrations, Percentages:

Total, Static, Motile, Progressive, Slow

WHO Standards:

WHO 4 & WHO 5 available

Kinematic Measures:

DAP, DSL, DCL, VAP, VSL, VCL, ALH, STR, LIN, BCF, WOB

Morph Averages:

Head Length, Head Width, Head Perimeter, Head Area

Distributed by:



Innovations to Rely On

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