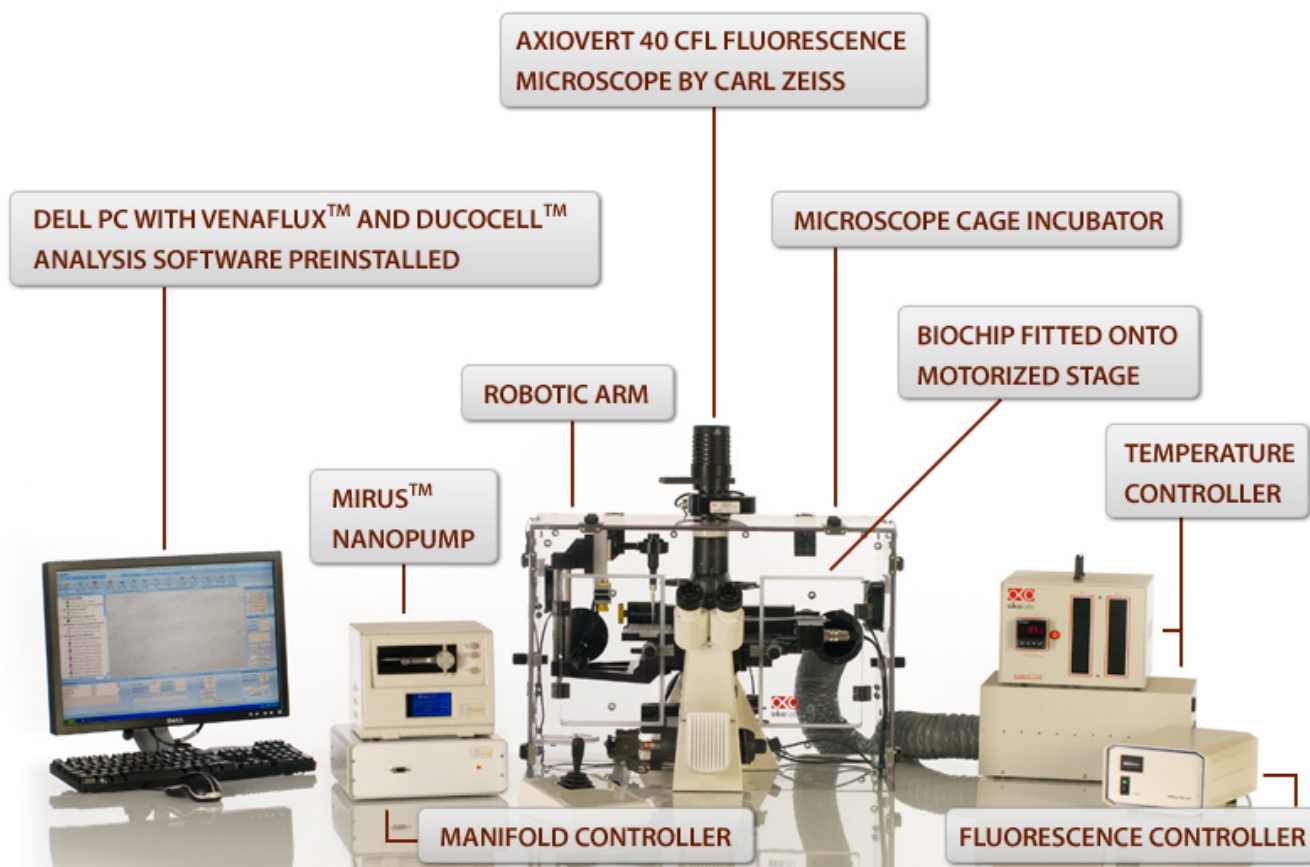


# VenaFlux™ Platform Technical Specifications



<b>Vena8 Biochip Specifications</b>	
<b>Biochip Coating:</b> Range of proteins:  Minimum Sample Volume:	VCAM, ICAM, MAdCAM, Fibronectin, vWF, Fibrinogen, Collagen etc.  ~10µl
<b>Cell Suspension Assay</b> Cell types:  Minimum Sample Volume: Maximum Sample Volume: Number of channels per biochip: Volume of each channel: Dimensions of each channel: Dead volume at input port: Thickness of bottom substrate:	T-cells: primary & cell lines e.g. HUT78 Monocytes: primary and cell lines; e.g. THP1 Eosinophils Neutrophils PBMCs, whole blood, etc.  ~10µl 100µl 8 0.8µl 400 µm (W) x 100 µm (D) x 20mm (L) 0.1 µl 0.5mm

<b>Mirus™ Nanopump Specifications</b>	
Shear Stress Range for cell suspension: Shear Stress Range for whole blood*: Volumetric Flow Rates: Sample Volume Aspiration Accuracy: Shear Stress Accuracy: Sample Volume Aspiration Precision:	0.05 - 10 dyne/cm <sup>2</sup> ; steps of 0.05 dyne/cm <sup>2</sup> (100 µL syringe) 2.25 - 200 dyne/cm <sup>2</sup> (1 mL syringe) 100nL/minute - 20 µL/minute (100 µL syringe) ±1% ±0.5% <1% CV

Shear Stress Precision: Software Control:	<0.5% CV Integrated <i>VenaFlux FlowAssay</i> software facilitates pumping of cell suspensions through biochips.
Dimensions:	220mm (W) x 175mm (D) x 220mm (H)
Weight:	Approx. 5kg
Power Requirements:	110 / 220V 50 / 60Hz

\*Considering human whole blood with a viscosity of 4.5 cP

\*\*Given for the flow of distilled water in a microcapillary with dimensions: 400 µm (W) x 100 µm (D) x 20mm (L).

<b>Microscope: Carl Zeiss Axiovert 40 CFL Specifications</b>	
Contrast Option:	Brighfield, Phase contrast, Varel, Fluorescence (TRITC, FITC, etc.)
Shutters:	Automated Brightfield and Fluorescence.
Objectives:	10x LD A-Plan, 20x LD A-Plan, 32x CP-Achromat, 40x LD A-Plan.
Eyepieces:	E-PL 10x/20 Br., 10x/20 Br. Foc.
Biochip Frame Holder:	Vena8 biochip compatible stage holder, Eppendorf tubes holder.
<b>Motorized Stage with Z-Focus:</b>	Marzhauser IM series stage, Travel 120mm x 100mm, Repeatability <1µm, Precision ±3µm, Maximum Travel speed 180mm/s.
<b>Microscope Cage incubator with Temperature Control:</b>	Temperature control ±0.1°C, CO <sub>2</sub> and humidity module Temperature monitoring software module, black panels for use in fluorescent microscopy (optional).
<b>Robotic Arm:</b>	Sample transfer from 96-well plate in to Vena8 biochip, tip washing, cell sample dilution.
<b>Robotic Arm pipettor:</b>	Tricontinent Z-series pump, 200µL max volume, 0.191µL/half-step, Z-drive.
<b>Digital Camera:</b>	Deltapix DP 450 USB 2.0 camera for image acquisition: 2 Mega Pixels (1,616 x 1,216); Color CCD; 1/1.8" format; Pixel 4.4µm x 4.4µm. Resolution: 12 FPS @ 1,616 x 1,216 pixels; 14 FPS @ 1,280 x 1,024 pixels; 18 FPS @ 1,024 x 768 pixels; 22 FPS @ 800 x 600 pixels; 26 PFS @ 640 x 480 pixels. Dynamic range: > 66dB.

<b>Dell PC Technical Specifications</b>
<b>Dell Optiplex 745 PC computer</b>
<ul style="list-style-type: none"> <li>Intel Core2 processor; 1.86GHz; 2GB RAM; ATI Radeon X1300PRO; Objective Imaging stage control hardware; 19" LCD monitor.</li> <li>Windows XP Professional SP2; DeltaPix Viewer Software; VenaFluxAssay and DucoCell software preinstalled.</li> </ul>

<b>VenaFluxAssay Software Specifications</b>
<ul style="list-style-type: none"> <li>Execution of preset protocols, simultaneous control of pumping, scanning and image acquisitions, sample transfer and protocol flow. Intuitive stepwise protocol interface with steps hierarchy and status control.</li> <li>Office2007 GUI interface, preset and user-designed protocols.</li> </ul>

<b>DucoCell Software Specifications</b>
<ul style="list-style-type: none"> <li>Automatic Counting and Detection; Morphological parameters analyzed automatically (Area, diameter, form-factor, ellipticity, eccentricity, orientation, perimeter, asymmetry, cell centroid coordinates, elliptical axis); Cell sorting and filtering;</li> <li>Ability to analyze sub-populations based on inclusion/exclusion of morphological parameters.</li> <li>Data may be exported to Excel spreadsheet incorporating automatic graph generation (e.g. % cell adhesion vs. shear stress).</li> <li>File Formats analyzed: *.jpg, *.jpeg, *.tif, *.tiff, *.gmp, *.gif, *.png.</li> </ul>