

# RFLSI Pro Laser Speckle Perfusion Imager

●Rapid ●High-resolution ●Large area ●Non-contact ●Without damage

RFLSI Pro Laser Speckle Perfusion Imager is based on the latest LSCI technology (Laser Speckle Contrast Imaging/LSCI, Laser speckle ratio analysis), with the unique non-contact, high time and spatial resolution, rapid imaging advantages. It provides a new recording way for the life sciences basic research and clinical medical, which can achieve real-time dynamic blood flow monitoring and video imaging, it is the vital basis for understanding the organization, organ pathology and physiological indicators. The instrument does not need any contrast media, the time resolution can be in milliseconds, the spatial resolution can be in microns. It also achieved the requirements of real-time observation of microvascular blood flow distribution and relative changes in values.



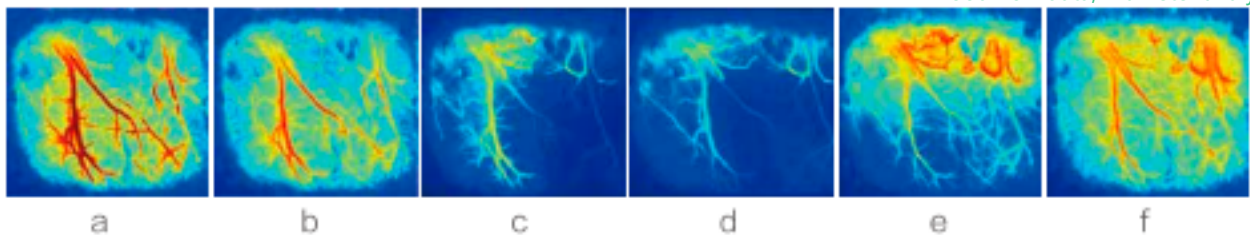
High time&spatial resolution, High contrast●

●Continuous imaging, No need to scan

Product Features

Non-contact, No contrast agent●

●Multi-output : Video, Image, Blood flow data, Diameter analysis



## ► Performance Advantages

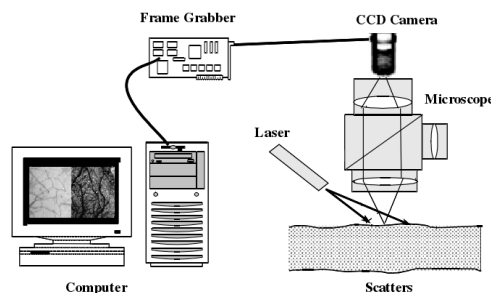
- Real-time monitoring of two-dimensional blood flow images at the order of microns. Use corrected static tissue structure interference and multiple scattering effects algorithm to quantitatively analyze blood flow changes and improve the accuracy of blood flow monitoring in different diameter vessels
- With the function of real-time online and off-line analysis of mean flow-rate and the vascular diameter in ROI (Region of Interest), with the function of off-line analysis of mean and standard deviation of TOI (Region of Interest), supporting the selection, copy, and deletion of ROI for any shape and quantity, and the ROI position and size can be adjusted with the mouse by free dragging and dropping
- Can maintain a high imaging speed of not less than 60fps under Full-Frame state (the camera's area array is all used)
- Real-time focal length adjustment, read the magnification directly, no calculations required.
- Select multiple vessels, online/off-line analysis of vascular diameter and its changes to meet the requirements of hemodynamics research
- Multiple data storage format: Original blood flow-rate data /Standard images in various formats (jpg, bmp, png) / .avi format video / etc.  
Multiple blood flow image acquisition methods: flexible continuous acquisition, designated time interval acquisition, designated frame number acquisition, etc.
- Highly coherently stable laser light source and low noise 12bit fast camera ensure the stability of excellent flow-rate measurement
- All-inclusive supporting solutions and after-sales service

## ► Application Areas

- ☒ CBF    ☒ MCAO model    ☒ Gastrointestinal blood flow    ☒ Lower limb ischemia / Angiogenesis
- ☒ Burns assessment    ☒ Skin patch test    ☒ Cerebral cortex diffusion inhibition    ☒ Other applications

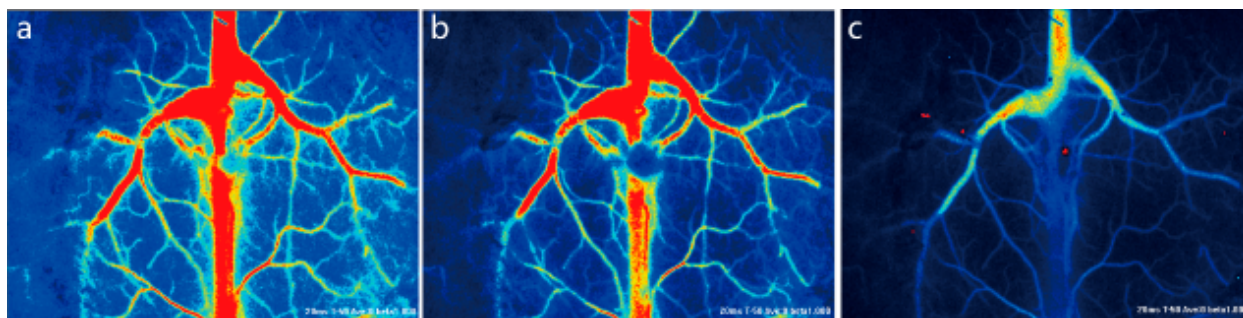
## ► Technical Parameters

- ★ The range of the blood flow monitoring is from zero to infinity. The spatial resolution of the blood flow imaging is 3.3, and the maximum is 2  $\mu\text{m}/\text{pixd}$ ;
- Laser type: laser diode, wavelength 785nm, monitoring camera power 90mW;
- Highly coherently stable laser light source and low noise 12bit fast camera ensure the stability of excellent flow-rate measurement;
- ★ Monitoring distance: 110mm, directly read the magnification, no autofocus measurement distance calibration;
- ★ In the recording process, choose any number of blood vessels, real-time display diameter changes and angle;
- The effective pixels in the unit area are no less than 1800000 pixels / $\text{cm}^2$ ; the monitoring pixel is 656\*494 pixels;
- ★ With two modes of continuous recording and interval recording;
- ★ The image monitoring area is 14.4\*10.9-2.15\*1.62mm, and the imaging speed is not less than 60 frame per second in full amplitude state;
- ROI area and vessel diameter measurements are added arbitrarily during the recording process or off-line analysis to support any shape and number of ROI choices;
- ★ Optical magnification: conventional 0.67-4.5 times, 0.071NA, optional 0.5 times, 2 times auxiliary objective lens; increase the auxiliary objective lens, the monitoring area and blood flow imaging spatial resolution will be adjusted accordingly;
- The monitoring records can be exported to AVI format video files, including curves, blood flow, experimental process records, the output video can be adjusted as required;



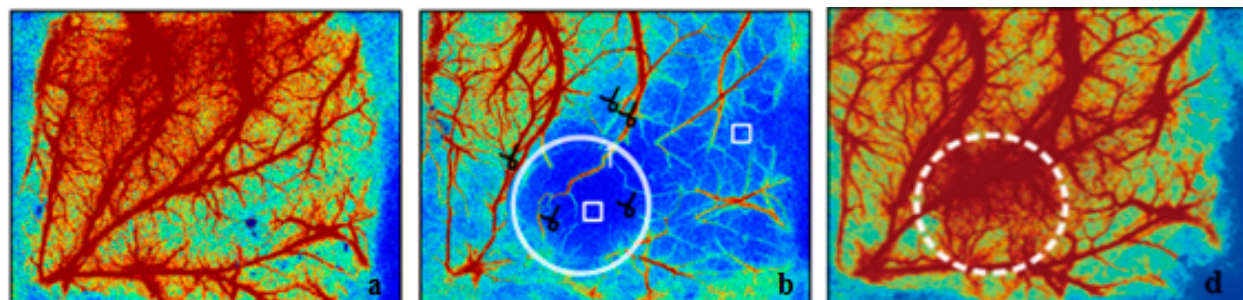
## ► Examples of Application

### Tree shrew (nonhuman primate) cerebral cortical blood flow imaging ►



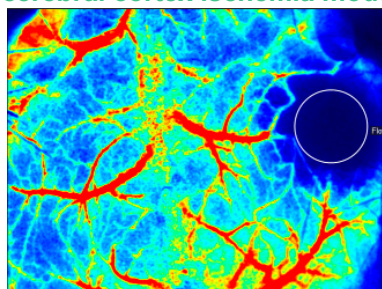
(a) Normal cerebral cortical blood flow distribution of tree shrew; (b) The distribution of cerebral cortical blood flow when start to over

### Cerebral cortical blood flow distribution of the rat mini-stroke model ►



(a) Normal cerebral cortical blood flow distribution; (b) Cortical blood flow distribution after established the mini-stroke model; (c) Cortical blood flow distribution after removal of the mini-stroke model for 24h

### Photochemical induction of mouse cerebral cortex ischemia model ►



### The blood flow imaging of the rat dorsal skin window model ►

