ADVANTEST

Photoacoustic Microscope

Sales of this product have ended.

Hadatomo™ Z

WEL5200

Noninvasive 3D Imaging of Blood Vessels in the Dermis

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Our Hadatomo™ Z photoacoustic microscope can be paired with our Euclid three-dimensional image viewer to provide unprecedented three-dimensional images of the skin. This tool noninvasively images the vascular network, melanin, and structure of the skin, contributing to the analysis of vascular diseases and dermatological research in the fields of beauty and healthcare. It is particularly suited to studying how the skin changes over time.

Hadatomo™ Z Photoacoustic Microscope

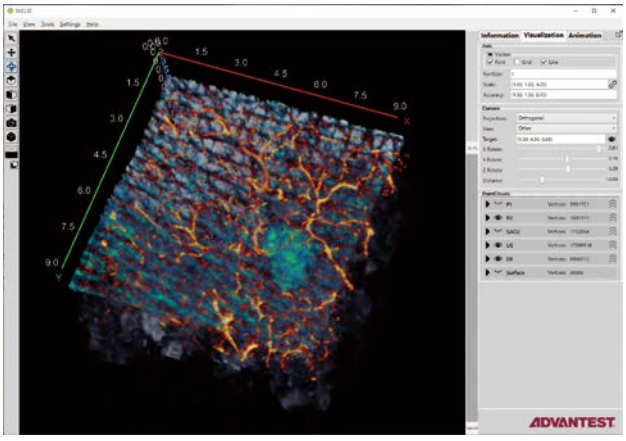
Multi-modality Imaging
Ultrasound visualizes skin texture and pores, while two different wavelengths of optical ultrasound selectively visualize melanin and blood vessels.

Acquisition of 3D Image Data through Quasi-real-time Imaging
In addition to real-time display of two-dimensional cross-section images, three-dimensional data images from photoacoustic imaging and ultrasound imaging can be acquired simultaneously in quasi-real-time. Measurement time ranges from a minimum of 40 seconds to a maximum time of 420 seconds, depending on the size of the measurement area.

High-resolution Images Obtained Label-free
Applying a small amount of water (acoustic coupling agent) to the measurement area is enough for measurement. A high-resolution ultrasonic sensor developed especially for this system makes focus placement easy with our software.

Two Types of Light Source Available
The 532/556 nm Laser Unit clearly displays blood vessels in the skin and oxygen saturation, while the 575/650 nm Laser Unit displays melanin and blood vessel networks in isolation. A "No Laser Unit" (without photoacoustic imaging capabilities) for 3D ultrasound imaging is also available. Users can select the optimal light source based on the specifications of their measurement application.
(Cover photo: Hadatomo™ Z equipped with 575/650 nm Laser Unit)

Euclid 3D Image Viewer

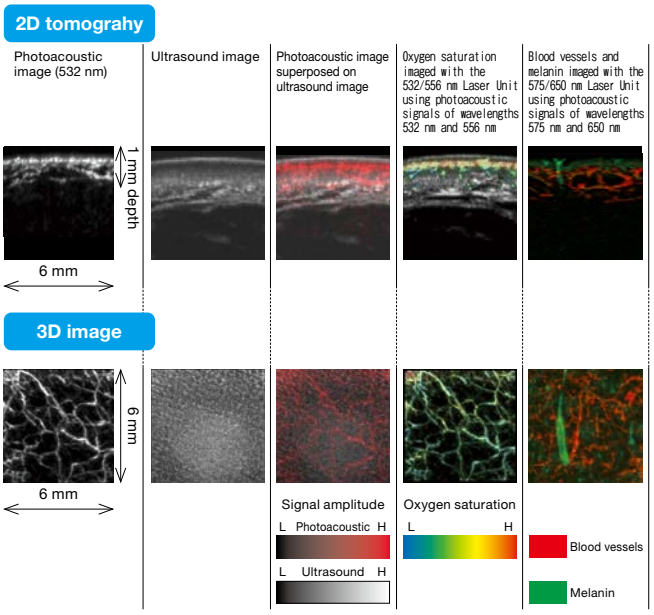


3D Image Display
Easy to operate, provides a 3D display of measurement data acquired by the Hadatomo™ series.

Superimpose 2+ Types of Image Data
Users can freely combine acquired data related to the vascular network, melanin, and skin structure, and create three-dimensional images and cross-section images.

Diverse Image Display Options
Supports image extraction in the horizontal direction and tomographic direction from the region of interest and displays images with appropriate colors and color maps.

WEL5200 Imaging Examples (Sample: forearm)



Specifications

Measurement	2D (Tomography), 3D	
Sampling frequency	500 MHz	
Measurement area (x, y)	(1) 6 x 6 mm (2) 9 x 9 mm (3) 6 x 3 mm	
Measurement depth (z)	3 mm (designated signal acquisition range)	
Scanning step	15 µm / 30 µm	
Measurement time (15 µm)	(1) 210 s (2) 420 s (3) 110 s	
Measurement time (30 µm)	(1) 70 s (2) 140 s (3) 40 s	
Light Source*	(A) 532/556 nm Laser Unit	(B) 575/650 nm Laser Unit
Wavelength	532 nm, 556 nm	575 nm, 650 nm
Horizontal image display	15 µm	
Axial image display	12 µm (depending on ultrasound velocity)	
Pulse energy (averaged value)	Below 16 µJ/pulse	Below 18 µJ/pulse (575 nm) Below 14 µJ/pulse (650 nm)
Pulse width	< 10 ns	
Repetition rate	1000 Hz (per 1 wavelength)	
Dimensions	Approx. 610 (W) × 730 (D) × 1,400 (H)	
Weight	< 135 kg	

*(A) or (B) laser unit can be selected as the light source.

- This product is a laser instrument with class 3B lasers.
- This product is a scientific instrument. It is not designed be used as a medical instrument.
- This product does not include a PC or USB 3.0 cable.
  Recommended PC Operating Environment : Microsoft Windows 10 64bit
  (CPU: Intel® Core™ i7-3770K or higher/ RAM: 16GB or more / Available HDD/SSD space: 1.5GB or more / USB-IF USB3.0 1 port)
  USB 3.0 cable required : less than 2.5 m, USB 3.0 Type-B (system side)
- Recommended PC Operating Environment for Euclid : Microsoft Windows 10 Pro 64bit
  (CPU: Intel® Core™ i7-10870H (2.20GHz) or higher / RAM: 16GB or more / Available HDD/SSD space: 1GB or more / Display resolution: 1920×1080 or higher / GPU GeForce RTX™ 3060 6GB GDDR6 or higher)
- The specifications and images in this catalog are subject to change without prior notice.

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https://www.advantest.com

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