

Photoacoustic Imaging Source

PhotoSonus

High Energy,
Mobile and Tunable
Wavelength Laser
Source



FEATURES

- ▶ High **150 mJ** output energy
- ▶ Fast wavelength tuning (10 Hz)
- ▶ **10 Hz** or **20 Hz** pulse repetition rate
- ▶ Integrated pump laser, OPO and PSU in single portable unit
- ▶ Turn-key operation and easy to use
- ▶ Fiber bundle connectors with safety interlock
- ▶ Fully motorized wavelength tuning
- ▶ Externally triggerable
- ▶ PC control via USB port and LabVIEW drivers

OPTIONS

- ▶ Rapid switching between OPO and pump wavelength (1064 nm)
- ▶ Access to pump laser wavelengths (1064 / 532 nm)
- ▶ Separate output of idler (1064 – 2300 nm)
- ▶ Motorized attenuator
- ▶ Energy meter

Following the demand of high output energies in the photoacoustic market for imaging larger volumes of tissue, PhotoSonus, a new high energy tunable laser source for photo-acoustic imaging is introduced. Time-tested Ekspla nanosecond pump laser, parametric oscillator, power supply and cooling unit are integrated in a single robust housing to provide mobility and ease of use.

Highly flexible PhotoSonus platform makes it easy to be integrated and used in a photoacoustic imaging system: it is fully motorized and computer controlled, have user trigger outputs/ inputs and special functions as fast

tuning between OPO wavelengths. Parametric oscillator generates output energies up to 150 mJ at peak. Achieving a highly uniform spatial distribution from OPO and adjustable beam diameter helps homogeneously couple various size fiber bundles and deliver balanced energy light to the target.

By employing a wide range of other options (like access to OPO idler range, toggling between OPO and fundamental wavelengths through simultaneous output), this laser system can be modified to specific user requirements in order to expand photo-acoustic imaging possibilities.

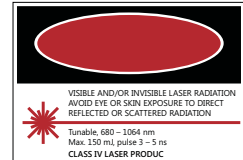
SPECIFICATIONS ¹⁾

| Parameter | Value |
|------------------------|-----------------|
| Wavelength range | 680 – 1064 nm |
| Pulse repetition rate | 10 or 20 Hz |
| Pulse duration | 3 – 5 ns (FWHM) |
| Pulse energy stability | < 2 % StDev |
| Beam divergence | < 2 mrad (FWHM) |

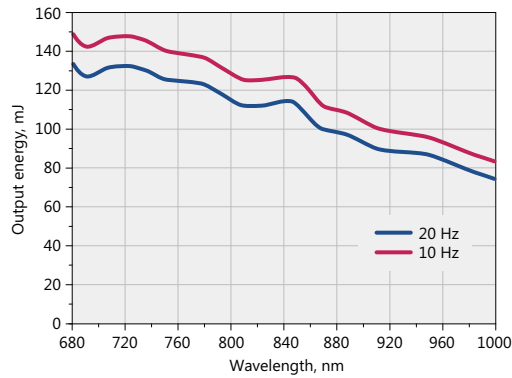
¹⁾ Due to continuous improvement, all specifications are subject to change without notice. Find latest updates and specifications at ekspla.com

POWER SUPPLY

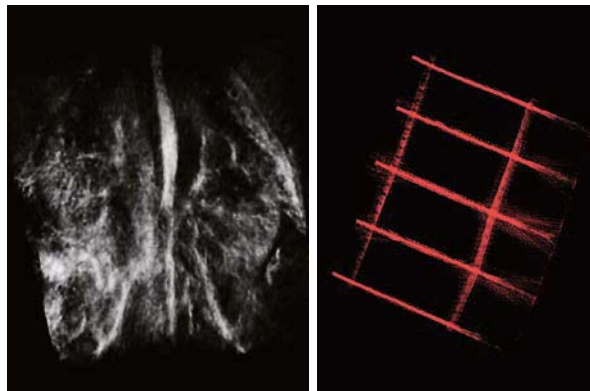
- ▶ Power supply unit integrated
- ▶ Universal line voltage
- ▶ Closed-loop air-water cooled



PERFORMANCE

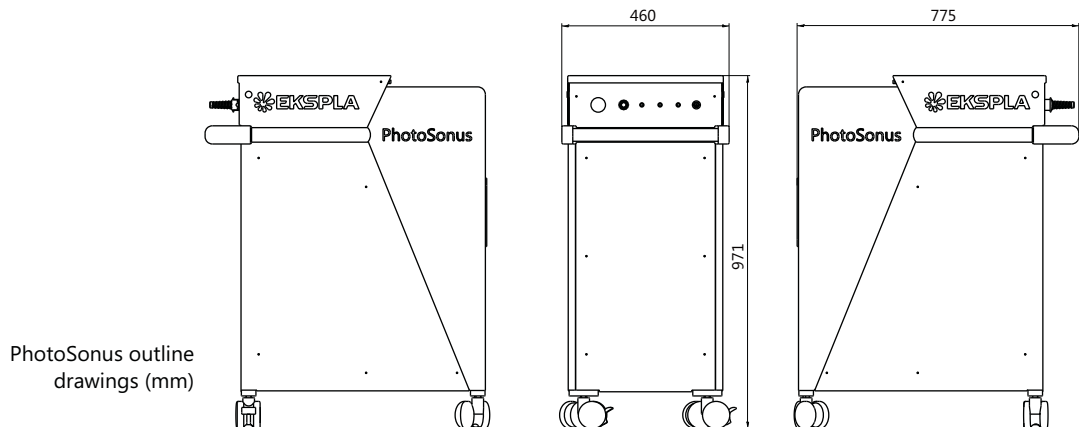


SAMPLE PHOTOACOUSTIC IMAGES



Courtesy of PhotoSound Technologies, Inc.

DRAWINGS



PhotoSonus outline drawings (mm)