

NT350 SERIES



NT352 series tunable laser seamlessly integrates in a compact housing a nanosecond optical parametric oscillator and Nd:YAG Q-switched laser.

Three models with different output pulse energy values are offered. The most powerful model has more than 150 mJ pulse energy at 700 nm.

Narrow linewidth ($<10 \text{ cm}^{-1}$) is nearly constant through whole tuning range, which makes laser suitable for many spectroscopy application.

The device is controlled from the remote keypad or from PC through RS232 interface using LabVIEW™ drivers that are supplied with the system. The remote pad features a backlit display that is easy to read even while wearing laser safety glasses.

System is designed for easy and cost-effective maintenance. Replacement of flashlamps can be done without misalignment of the laser cavity and deterioration of laser performance. OPO pump energy monitoring system helps to increase lifetime of the optical components.

Optional items are available allowing optimization of the laser system for Your application, for example:

- ▶ Fiber coupled output in 350–2000 nm range;
- ▶ Efficient second harmonic generator for 330–530 nm range;
- ▶ Pulse energy attenuator;
- ▶ Water-air cooled power supply.

Please inquire custom-build versions and options.

High Energy NIR Range Tunable Lasers

FEATURES

- ▶ Hands-free, automated wavelength tuning from **660 to 2450 nm**
- ▶ Up to **150 mJ** pulse energy in near-IR spectral range
- ▶ Narrow linewidth across tuning range
- ▶ **3–5 ns** pulse duration
- ▶ Remote control pad
- ▶ PC control via RS232 and LabVIEW™ drivers
- ▶ Separate output port for 532 nm beam. Output for 1064 nm is optional
- ▶ OPO pump energy monitoring
- ▶ Replacement of the flashlamps can be done without misalignment of the laser cavity
- ▶ Hermetically sealed oscillator cavity protects non-linear crystals from dust and humidity

APPLICATIONS

- ▶ Photoacoustic imaging
- ▶ Photobiology
- ▶ Remote sensing
- ▶ Time-resolved spectroscopy
- ▶ Non-linear spectroscopy
- ▶ Other laser spectroscopy applications

SPECIFICATIONS ¹⁾

| Model | NT352A | NT352B | NT352C |
|---|---|---------------------|--------|
| OPO | | | |
| Wavelength range | | | |
| Signal | 660–1064 nm | | |
| Idler | 1065–2450 nm | | |
| SH | 330–530 nm | | |
| Output pulse energy ²⁾ | | | |
| OPO | 70 mJ | 110 mJ | 150 mJ |
| SH | 12 mJ | 20 mJ | 25 mJ |
| Linewidth ³⁾ | | | |
| <10 cm ⁻¹ | | | |
| Tuning resolution ⁴⁾ | | | |
| Signal (660–1064 nm) | 1 cm ⁻¹ | | |
| Idler (1064–2450 nm) | 1 cm ⁻¹ | | |
| SH (330–530 nm) | 2 cm ⁻¹ | | |
| Pulse duration ⁵⁾ | | | |
| 3–5 ns | | | |
| Typical beam diameter ⁶⁾ | | | |
| | 5 mm | 7 mm | |
| Typical beam divergence ⁷⁾ | | | |
| <2 mrad | | | |
| Polarization | | | |
| Signal beam | horizontal | | |
| Idler beam | vertical | | |
| SH beam | vertical | | |
| PUMP LASER ⁸⁾ | | | |
| Pump wavelength | | | |
| | 532 nm | | |
| Max pump pulse energy | | | |
| | 230 mJ | 350 mJ | 450 mJ |
| Pulse duration | | | |
| | 4–6 ns | | |
| Beam quality | | | |
| | Hat-Top in near field. Close to Gaussian in far field | | |
| Beam divergence | | | |
| | <0.6 mrad | | |
| Pulse energy stability (StdDev) | | | |
| | <2.5 % | | |
| Pulse repetition rate | | | |
| | 10 or 20 Hz | 10 Hz | |
| PHYSICAL CHARACTERISTICS | | | |
| Unit size (W × L × H) | | | |
| | 456 × 610 × 270 mm | 456 × 1020 × 270 mm | |
| Power supply size (W × L × H) | | | |
| | 330 × 490 × 585 mm | 550 × 600 × 530 mm | |
| Umbilical length | | | |
| | 2.5 m | | |
| OPERATING REQUIREMENTS | | | |
| Water consumption (max 20 °C) ⁹⁾ | | | |
| | 6 l/min | 10 l/min | |
| Room temperature | | | |
| | 15–30 °C | | |
| Relative humidity | | | |
| | 20–80 % (non-condensing) | | |
| Power requirements ¹⁰⁾ | | | |
| | 208 or 240 V AC, single phase 50/60 Hz | | |
| Power consumption ¹¹⁾ | | | |
| | 1.8 / 3.4 kVA | 1.8 kVA | |

¹⁾ Due to continuous improvement, all specifications are subject to change without notice. The parameters marked typical are not specifications. They are indications of typical performance and will vary with each unit we manufacture. Unless stated otherwise all specifications are measured at 700 nm and for basic system without options.

²⁾ Measured at 700 nm for OPO and 350 nm for SH. See tuning curves for typical outputs at other wavelengths.

³⁾ In signal and idler range.

⁴⁾ When wavelength is controlled from PC. When wavelength is controlled from keypad, tuning resolution is 0.1 nm for signal, 1 nm for idler and 0.5 nm for SH.

⁵⁾ FWHM measured with photodiode featuring 1 ns rise time and 300 MHz bandwidth oscilloscope.

⁶⁾ Beam diameter is measured at 700 nm at the 1/e² level and can vary depending on the pump pulse energy.

⁷⁾ Full angle measured at the FWHM level at 700 nm.

⁸⁾ Separate output port for the 532 nm beam is standard. Output for 1064 nm beam is optional. Pump laser output will be optimized for OPO operation and specification may vary with each unit we manufacture.

⁹⁾ At 10 Hz pulse repetition rate. Air cooled power supply is available as option.

¹⁰⁾ Mains voltage should be specified when ordering.

¹¹⁾ At 10/20 Hz pulse repetition rate.



PERFORMANCE

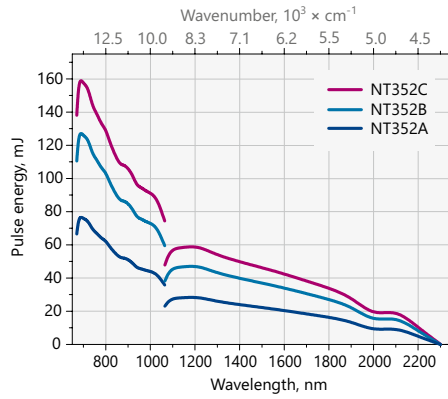


Fig 1. Typical output energy of the NT350 series tunable wavelength systems

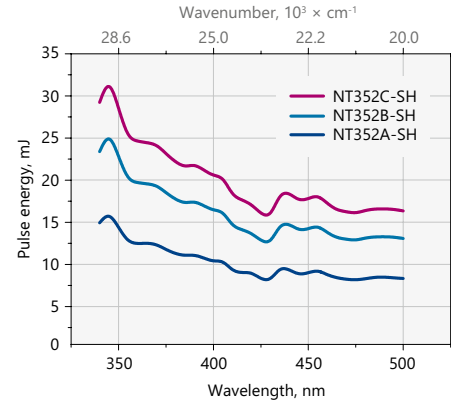


Fig 2. Typical output energy of the NT350 series tunable wavelength systems with SH option

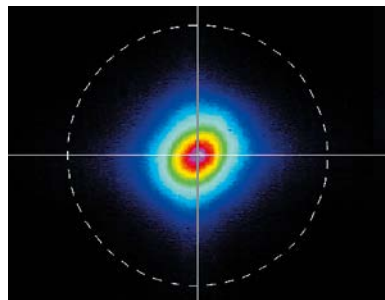
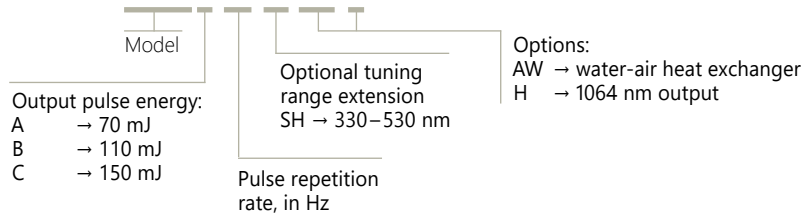


Fig 3. Typical far field beam profile of NT352B laser at 800 nm

ORDERING INFORMATION

Note: Laser must be connected to the mains electricity all the time. If there will be no mains electricity for longer than 1 hour then laser (system) needs warm up for a few hours before switching on.

NT352A-10-SH-AW-H



Femtosecond Lasers

Picosecond Lasers

Picosecond Tunable Systems

Nanosecond Lasers

Nanosecond Tunable Lasers

High Energy Lasers

Other Ekspla Products