NT252 SERIES

NT252 series tunable laser systems integrate into a single compact housing a nanosecond Optical Parametric Oscillator (OPO) and Diode-Pumped Solid-State (DPSS) Q-switched pump laser. Diode pumping enables fast data acquisition at high pulse repetition rates up to 1 kHz while avoiding frequent flashlamp changes that are common when flashlamp pumped lasers are used. Special cooling technology eliminates the need for tap water, thus further reducing running and maintenance costs.

All lasers feature motorized tuning across the specified tuning range. The output wavelength can be set from control pad with backlight display that is easy to read even while wearing laser safety glasses. Alternatively, the laser can be also controlled from personal computer using supplied LabVIEW™ drivers.

NT252 series tunable laser systems guarantees on-time warranty and post warranty services and spares supply.

NT252 series tunable laser systems feature low maintenance costs.

Superior tuning resolution (1 – 2 cm⁻¹) allows recording of high quality spectra.

Higher integration level saves valuable space in the laboratory.

In-house design and manufacturing of complete systems, including pump lasers, guarantees on-time warranty and post warranty services and spares supply.

Variety of control interfaces: USB, RS232, LAN and WLAN ensures easy control and integration with other equipment.

Attenuator and fiber coupling options facilitate incorporation of NT252 systems into various experimental environments.

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### SPECIFICATIONS ¹⁾

<table>
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<tr>
<th>Model</th>
<th>NT252</th>
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#### OPO

**Wavelength range**
- **Signal**: 670 – 1063 nm
- **Idler**: 1064 – 2600 nm
- **SH**: 335 – 670 nm

**Pulse energy** ²⁾
- **OPO**: 1100 µJ at 750 nm
- **SH**: 200 µJ at 400 nm

**Pulse repetition rate**: 1000 Hz

**Linewidth** ³⁾
- **Signal**: < 8 cm⁻¹
- **Idler**: 1 cm⁻¹
- **SH**: 1 cm⁻¹

**Tuning resolution** ⁴⁾
- **Signal**: 1 cm⁻¹
- **Idler**: 1 cm⁻¹
- **SH**: 2 cm⁻¹

**Polarization**
- **Signal**: horizontal
- **Idler**: vertical
- **SH**: horizontal

**Typical beam diameter** ⁵⁾ ⁶⁾
- 3 × 6 mm

#### PUMP LASER

**Pump wavelength** ⁷⁾
- 532 nm

**Max pump pulse energy** ⁸⁾
- 4 mJ

**Pulse duration** ⁹⁾
- 4 – 6 ns

**Pulse energy stability (StdDev)**
- < 2.5 %

#### PHYSICAL CHARACTERISTICS

<table>
<thead>
<tr>
<th>Unit size (W × L × H)</th>
<th>456 × 1040 × 297 mm</th>
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<tbody>
<tr>
<td>Power supply size (W × L × H)</td>
<td>520 × 400 × 300 mm</td>
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<tr>
<td>Umbilical length</td>
<td>2.5 m</td>
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#### OPERATING REQUIREMENTS

**Cooling**
- air-cooled

**Room temperature**
- 18 – 27 °C

**Relative humidity**
- 20 – 80 % (non-condensing)

**Power requirements**
- 100 – 240 V AC, single phase 50/60 Hz

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¹⁾ Due to continuous improvement, all specifications are subject to change. Parameters marked typical are illustrative; they are indications of typical performance and will vary with each unit we manufacture. Unless stated otherwise, all specifications are measured at 750 nm and for basic system without options.

²⁾ Please refer to tuning curves for typical outputs at other wavelengths.

³⁾ In signal and idler range.

⁴⁾ For manual input from PC. When wavelength is controlled from keypad, tuning resolution is 0.1 nm for signal, 1 nm for idler and 0.05 nm for SH.

⁵⁾ Measured at the wavelength indicated in the “Pulse energy” specification row.

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

⁷⁾ Separate output port for the 2nd and other harmonic are optional.

⁸⁾ Laser max pulse energy will be optimized for best OPO performance. The actual pump laser output can vary with each unit we manufacture.

⁹⁾ Measured at FWHM level with photodiode featuring 1 ns rise time and 300 MHz bandwidth oscilloscope.
PERFORMANCE

Fig 1. Typical output pulse energy of the NT252-SH tunable laser

OUTLINE DRAWINGS

Fig 3. NT252 series laser head dimensions

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.

NT252-SH-2H

Model

Options:
2H  → extra 532 nm output
H   → extra 1064 nm output

Optional tuning range extension:
SH  → 335 – 670 nm

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