# NT340 SERIES

## Nanosecond Tunable Laser Systems

### Integrated OPO and Q-switched Laser


NT340 series tunable laser seamlessly integrates in a compact housing the nanosecond optical parametric oscillator and Nd:YAG Q-switched laser.

The system features high conversion efficiency, hands-free wavelength tuning from UV to IR, easy maintenance and separate output for pump laser beam.

**NT340 available models:**

- Broad bandwidth models based on type 1 BBO OPO.
- Narrow bandwidth models based on type 2 BBO OPO.
- Narrow bandwidth models can be configured with SH extension to 210–419 nm range.

The laser 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.

Narrow band models features less than 5 $cm^{-1}$ linewidth that is ideal for many spectroscopic applications.

The laser offers broad selection of optional items that allows to find optimal configuration for any task.

Options includes tuning range extension in UV range (210–419 nm), fiber coupled output, up to 50 Hz pulse repetition rate, separate Nd:YAG laser harmonics output ports (1064, 532, 355 and 266 nm wavelengths) from build-in harmonics generator and water-air cooled power suply.

## FEATURES

- No gap tuning from **210 nm** to **2300 nm**
- Output energy
  – up to **4 mJ** in **UV**
  – up to **40 mJ** in **VIS**
- Cost effective models with tuning from **420 nm** to **2300 nm**
- **5** $cm^{-1}$ linewidth for narrow bandwidth models
- **3–5 ns** pulse duration
- **10** or **20 Hz** repetition rate
- **Remote** control pad
- **PC** control via RS232 and **LabView** drivers
- Separate output for laser beam at **355 nm**
- OPO pump energy monitoring

## APPLICATIONS

- Laser-induced fluorescence
- Photolysis
- Photobiology
- Remote sensing
- LIDAR
- Nonlinear optical materials
- Your application is welcome…

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## SPECIFICATIONS [1]

| Model | NT341A | NT341B | NT342A | NT342B |
|---|---|---|---|---|
| **OPO** | | | | |
| Wavelength range, nm: [2] | | | | |
| Signal | 420–680 | 420–680 | 420–709 | 420–709 |
| Idler | 740–2300 | 740–2300 | 710–2300 | 710–2300 |
| SH generator (optional) | – | – | 210–419 | 210–419 |
| Typical output pulse energy: | | | | |
| OPO [3] | 20 | 40 | 15 | 30 |
| SH generator (optional) [4] | – | – | 2 | 4 |
| Linewidth, $cm^{-1}$ [5] | 10–110 | 10–110 | < 5 | < 5 |
| Scanning step, nm: | | | | |
| Signal (420–709 nm) | 0.1 | 0.1 | 0.1 | 0.1 |
| Idler (710–2300 nm) | 1 | 1 | 1 | 1 |
| SH range (210–419 nm) | – | – | 0.05 | 0.05 |
| Pulse duration, ns [6] | 3–5 | | | |
| Typical beam diameter, mm [7] | 4 | 5 | 4 | 5 |
| Typical beam divergence, mrad [8] | < 6 | < 6 | < 2 | < 2 |
| Polarization: | | | | |
| Signal beam | horizontal | | | |
| Idler beam | horizontal | horizontal | vertical | vertical |
| SH beam | – | – | vertical | vertical |
| **PUMP LASER [9]** | | | | |
| Pump wavelength, nm | 355 | | | |
| Max pump pulse energy, mJ | 70 | 135 | 70 | 135 |
| Pulse duration, ns | 4–6 | | | |
| Beam quality | "Hat-Top" in near and near Gaussian in far fields | | | |
| Beam divergence, mrad | < 0.5 | | | |
| Pulse energy stability (StDev), % | < 3.5 | | | |
| Pulse repetition rate, Hz | 10 or 20 | | | |
| **PHYSICAL CHARACTERISTICS** | | | | |
| Unit size (W×H×L), mm | 446×260×600 | | | |
| Power supply size (W×H×L), mm | 330×670×520 | | | |
| Umbilical length, m | 2.5 | | | |
| **OPERATING REQUIREMENTS** | | | | |
| Water consumption (max 20 °C), l/min [10] | 10 | | | |
| Room temperature, °C | 15–30 | | | |
| Relative humidity (noncondensing), % | 20–80 | | | |
| Voltage | 208–240 VAC, single phase 50/60 Hz | | | |
| Power, kVA | 2.5 | | | |

[1] *All specifications 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 450 nm.*

[2] *Hands-free tuning range is 210–355nm and 410–2300 nm. For 355–419 nm range manual re-configuration is necessary.*

[3] *Measured at 450 nm. See tuning curves for typical outputs at other wavelengths.*

[4] *Measured at 260 nm. See tuning curves for typical outputs at other wavelengths.*

[5] *Linewidth is <8 $cm^{-1}$ for 210–419 nm range*

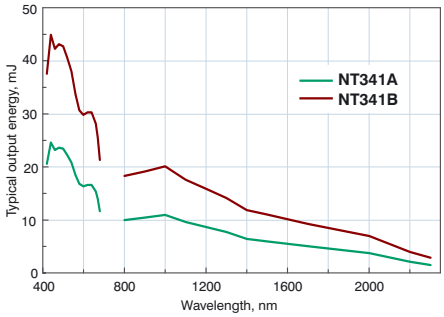
[6] *FWHM measured with photodiode featuring 500 ps rise time and 300 MHz bandwidth oscilloscope.*

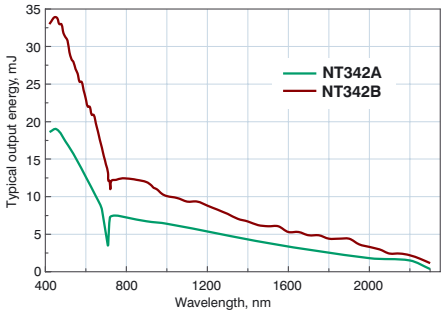
[7] *Beam diameter is measured @ 450 nm at the $1/e^2$ point and can vary depending on the pump pulse energy.*

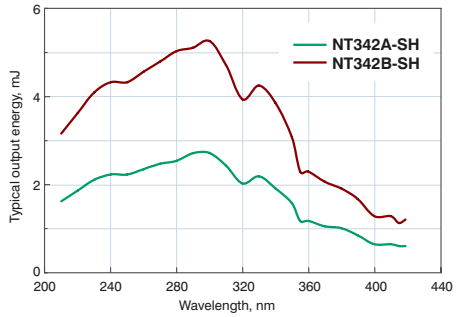
[8] *Full angle measured at the $1/e^2$ point@ 450 nm .*

[9] *Separate output port for the 355 nm beam is standard. Outputs for 1064 nm and 532 nm beams are optional.*

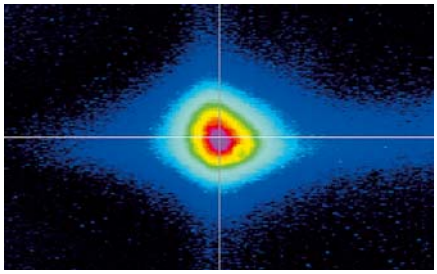
[10] *Air cooled power supply is optional.*




Typical tuning curves of NT340 series lasers



Typical far field beam profile of NT342 laser


**Requests for custom made products are welcome.**

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