

NT340

SERIES

Tunable Wavelength Lasers

Integrated OPO and Q-switched Laser

FEATURES

- Hands-free no gap wavelength tuning from **400 to 2600 nm**
- No gap tuning from **210 nm** to **2600 nm** with optional UV extension
- Up to **40 mJ** pulse energy in visible spectral range
- Up to **4 mJ** pulse energy in **UV** spectral range
- Optional sum-frequency generator extension for improved output in **300-400 nm** spectral range
- Less than **5 cm⁻¹** linewidth
- **3-5 ns** pulse duration
- **10 or 20 Hz** repetition rate
- **Remote** control pad
- PC control via RS232 and **LabView** drivers
- Separate output port **355 nm** beam. Outputs for **1064** and **532 nm** are optional
- OPO pump energy monitoring

APPLICATIONS

- Laser-induced fluorescence
- Flash Photolysis
- Photobiology
- Remote sensing
- Time-resolved spectroscopy
- Non-linear spectroscopy
- Other laser spectroscopy applications



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.

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.

NT340 SERIES AVAILABLE MODELS

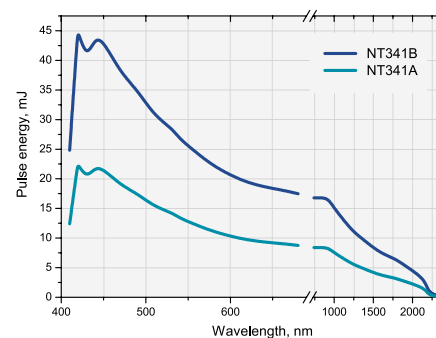
- Broad bandwidth models based on type 1 BBO OPO.
- Narrow bandwidth models based on type 2 BBO OPO. Narrow bandwidth model can be configured with SH or SF tuning range extension for 193-419 nm output.

To configure laser for any application, broad selection of optional items are available:

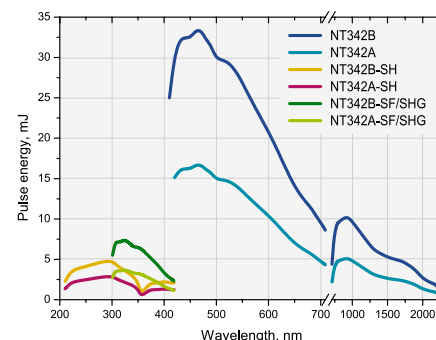
- Tuning range extension in UV range (210-419 nm);
- Tuning range extension in 300-400 nm range with high pulse energy;
- Tuning range extension in DUV range (193-210 nm);
- Fiber coupled output in 350-680 nm range;
- Pulse energy attenuator;
- Separate Nd:YAG laser harmonics output ports (1064, 532, 355 and 266 nm wavelengths) from build-in harmonics generator;
- Water-air cooled power supply.

SPECIFICATIONS ¹⁾

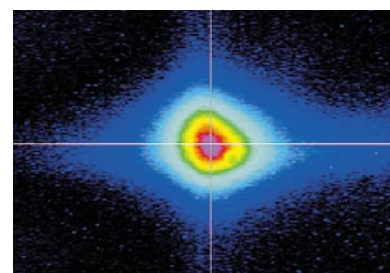
MODEL	NT341A	NT341B	NT342A	NT342B
OPO				
Wavelength range, nm ²⁾				
Signal	420–680	420–680	420–709 ³⁾	420–709 ³⁾
Idler	740–2300	740–2300	710–2300 ³⁾	710–2300 ³⁾
SH generator (optional)	—	—	210-419	210-419
SH/SF generator (optional)	—	—	225-419	225-419
DUV generator (optional)	—	—	—	193–210
Output pulse energy, mJ				
OPO ⁴⁾	20	40	15	30
SH generator (optional) ⁵⁾	—	—	2	4
SH/SF generator (optional) ⁶⁾	—	—	3	6
DUV generator (optional) ⁷⁾	—	—	—	1
Linewidth, cm ⁻¹ ⁸⁾				
	10–350	10–350	< 5	< 5
Scanning step, nm				
Signal (420-709 nm)	0.1			
Idler (710-2300 nm)	1			
SH range (210-419nm)	—	—	0.05	0.05
Pulse duration, ns ⁹⁾				
	3-5			
Typical beam diameter, mm ¹⁰⁾				
	4	5	4	5
Typical beam divergence, mrad ¹¹⁾				
	< 6		< 2	
Polarization				
Signal beam	horizontal			
Idler beam	horizontal		vertical	
SH/SF beam	—	—	vertical	
PUMP LASER ¹²⁾				
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 ¹³⁾	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 ¹⁴⁾	10			
Room temperature, °C	15–30			
Relative humidity (noncondensing), %	20–80			
Voltage	208–240 VAC, single phase 50/60 Hz			
Power, kVA	2.5			



Typical output energy of the NT341 series tunable wavelength systems



Typical output energy of the NT342 series tunable wavelength systems



Typical far field beam profile of NT342 laser

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 210-2300 nm.
³⁾ Tuning range extension to 400-2600 nm is optional.
⁴⁾ Measured at 450 nm. See tuning curves for typical outputs at other wavelengths.
⁵⁾ Measured at 260 nm. See tuning curves for typical outputs at other wavelengths.
⁶⁾ Measured at 340 nm. SF generator is optimized for maximum output in 300-400 nm range. See tuning curves for typical outputs at other wavelengths.
⁷⁾ Measured at 200 nm.

⁸⁾ Linewidth is < 8 cm⁻¹ for 210-419nm range
⁹⁾ FWHM measured with photodiode featuring 500 ps rise time and 300 MHz bandwidth oscilloscope.
¹⁰⁾ Beam diameter is measured @ 450 nm at the 1/e² point and can vary depending on the pump pulse energy.
¹¹⁾ Full angle measured at the 1/e² point @ 450 nm.
¹²⁾ Separate output port for the 355 nm beam is standard. Outputs for 1064 nm and 532 nm beams are optional. Laser output will be optimised for OPO operation and specification may vary with each unit we manufacture.
¹³⁾ Version with SF generator has dimensions of 446×260×820 mm (W×H×L). Version with DUV generator has dimensions of 446×260×1020 mm (W×H×L).
¹⁴⁾ Air cooled power supply is optional.



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