

Continuous-Wave Ti:S Laser TiC

- 700-1000 nm tuning range with a single set of optics
- 690...1060 nm available customized and optimized wavelengths
- >1.8 W at 800 nm average output power
- Down to 2 GHz linewidth (with optional etalons)
- Integrated on-board pump laser option
- Automated wavelength tuning and Windows software
- Built-in spectrometer and power meter (optional)
- Optional built-in fiber coupling



TiC laser model designed for external pumping

Product overview

Continuous-wave Ti:Sapphire laser features broad wavelength tuning range (700-1000 nm) and finds itself as a useful tool for many fields of fundamental research, especially various spectroscopy applications.

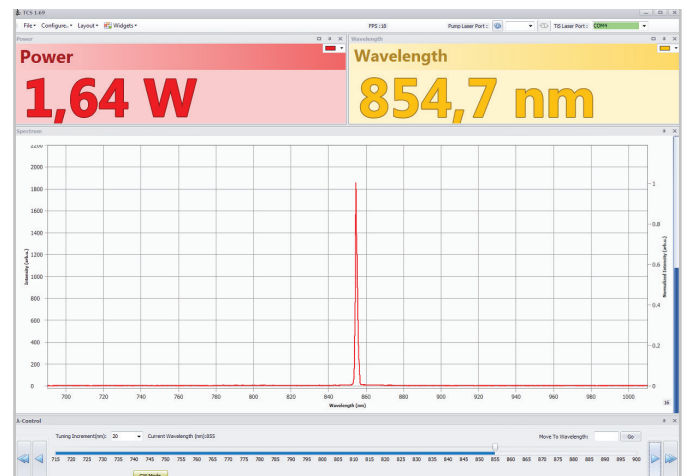
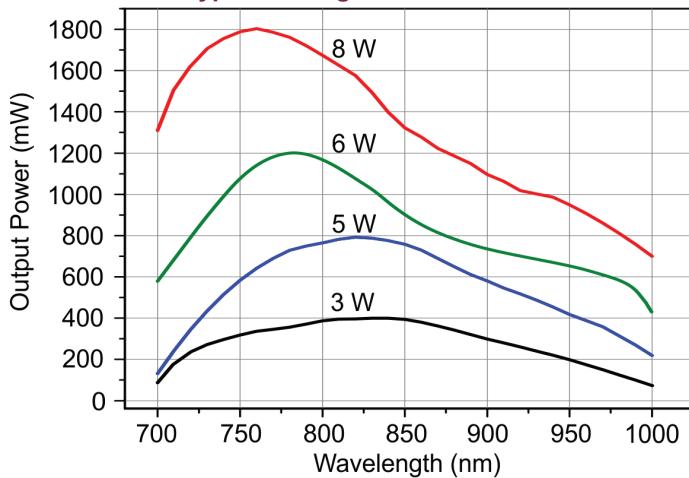
The wavelength tuning is carried out by a birefringent Lyot filter and can be either manually controlled or motorized via a step motor with USB connection to a PC. Two etalons can be optionally placed into the cavity in order to narrow the linewidth of the generated radiation down to 2 GHz.

The CW Ti:Sapphire laser needs to be pumped by a CW DPSS pump laser at 532 nm. Our company offers the oscillators without the pump laser, as well as a version with integrated pump laser with pump power varying from 2 W to 8 W.

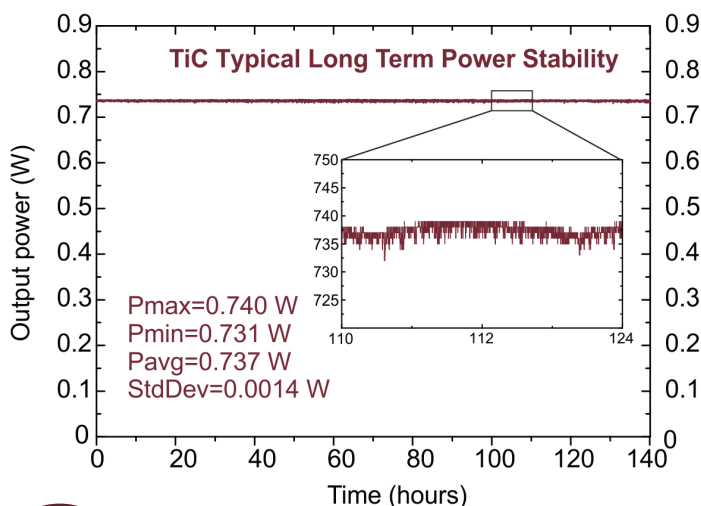
Optional fiber-coupled modification is available. The radiation is steered into a fiber with 4 μm core diameter. The optical scheme allows easy switching between the free-space and the fiber outputs via a flip mount.

TiC technical specifications

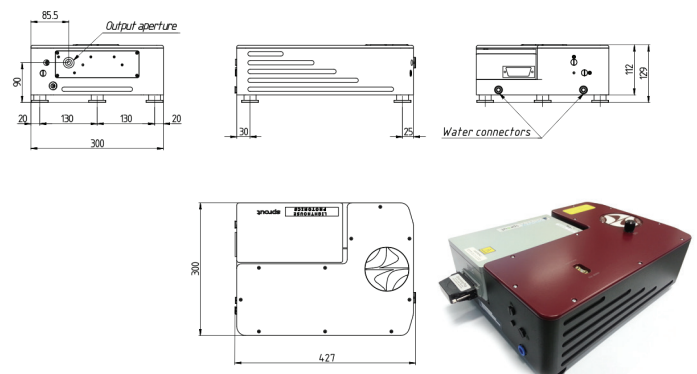
Typical tuning curves for TiC laser



Extended Windows control software in "Auto" package



TiC laser head with integrated pump



Standard models and available pump laser power matrix		
Pump laser power	TiC output power at 800 nm (free-space)	TiC output power at 800 nm (fiber-coupled, optional)
3 W	>400 mW	>250 mW
5 W	>800 mW	>500 mW
6 W	>1.2 W	>900 mW
8 W	>1.8 W	>1.2 W
General optical specifications		
Wavelength tuning range	700-1000 nm (customized wavelengths in the range of 690...1060 nm)	
Output linewidth	<45 GHz (default) <20 GHz (with 1 intra-cavity etalon, optional) <2 GHz (with 2 intra-cavity etalons, optional)	
Pump laser	integrated or stand-alone DPSS 480...550 nm low-noise pump laser (up to 8 W); the pump laser must have low amplitude noise and have a TEM00 spatial mode	
Fiber output (optional)	FC socket, SMF FC-FC patch-cord, length 1 m, core dia 4 um	
Spatial mode and M ²	TEM00 (M ² <1.2)	
Output beam diameter (at 1/e ²)	<2 mm	
Output polarization	linear, horizontal, PER >100:1	
Beam divergence	<1 mrad	
Long-term output power stability ¹⁾	<0.2% rms	
Physical dimensions (L × W × H)		
Laser head	427 × 300 × 129 mm (incl. integrated pump laser) 427 × 200 × 123 mm (for external pumping)	
Integrated pump laser control unit	353 × 360 × 119 mm	
Closed-loop chiller unit	430 × 340 × 190 mm	
Environmental and utility specifications		
Operating temperature	15-30 °C	
Relative humidity	<60%, non-condensing	
Voltage	single-phase; 100-240 VAC; 50/60 Hz	
Power consumption	<1.5 kW	
Available factory configuration packages ²⁾		
Thermally stabilized monolithic body	included in any package	
"Manual" factory package	<ul style="list-style-type: none"> - birefringent Lyot filter with manual micrometer screw adjustment - (optional) one or two intracavity etalons with manual adjustment 	
"Basic" factory package (default)	<ul style="list-style-type: none"> - birefringent Lyot filter with step-motor adjustment - (optional) one or two intracavity etalons with manual or step-motor adjustment - motorized wavelength tuning with remote control - basic Windows software with wavelength tuning remote control capability 	
"Auto" factory package	<ul style="list-style-type: none"> - birefringent Lyot filter with step-motor adjustment - (optional) one or two intracavity etalons with manual or step-motor adjustment - built-in spectrometer - built-in power meter - active output power stability locking³⁾ - BRF control and etalons (optional) control via single Windows software application - extended Windows software version, incorporating monitoring of operational parameters and single-click wavelength tuning 	
<p>1) – after 30 min warm-up with cold start, during 12-hour continuous operation under equal room temperature conditions using factory-supplied/recommended stabilized closed-loop chiller with proper capacity and factory-supplied/recommended low-noise on-board integrated highly stable pump laser with active power locking turned ON; "Auto" package only;</p> <p>2) – please select one of the packages as basis for your system; certain features may be tailored or combined differently according to specific customer requirements;</p> <p>3) – available only with certain manufacturer-certified pump laser models, please enquire.</p>		