

# TIS-SF-777

CW Frequency-Stabilised Ti:Sapphire Laser



1

**NARROWEST LINEWIDTH**

3

**AUTOMATED WAVELENGTH SETTING OPTION**

2

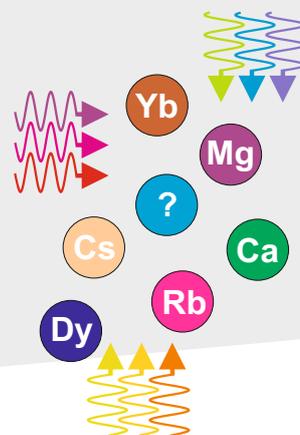
**ULTRA-STABLE**

4

**FREQUENCY DOUBLER AVAILABLE**

Flagship model TIS-SF-777 of Tekhnoscan's CW single-frequency titanium-sapphire laser series features exceptionally narrow radiation absolute line width that amounts to only about 2-3 kHz/sec rms (specification: < 10 kHz/sec). The design of TIS-SF-777 laser and its electronic control system are especially tailored to make this super-high-precision laser very easy to set-up and to operate, and also to deliver ultra-high stability of radiation frequency even in the presence of high level of external perturbations. In combination with efficient resonant frequency doubler by Tekhnoscan TIS-SF-777 laser will deliver the line width of about 5-10 kHz/sec in the UV and blue spectrum ranges.

Frequency stabilisation of the laser output is done with a thermostated high-finesse reference cavity and special PZT actuators that have extended response bandwidth. The super-fast PZT-controlled mirrors allowed to avoid using an electro-optical modulator in the frequency stabilisation system, which would otherwise complicate the laser design and the electronic control boards as well as it would introduce certain additional radiation losses. Because of the foregoing TIS-SF-777 laser features relative simplicity and high reliability of design as well as high output efficiency: maximum output power of the laser exceeds 1.8 W with a 10-W DPSS laser pump (532 nm).

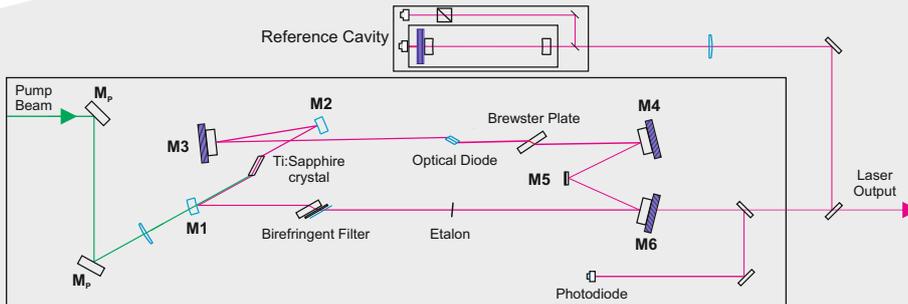


## Features

- ✓ Highly-flexible laser resonator architecture
- ✓ Absolute frequency stabilisation to atomic/molecular reference line available
- ✓ Automated absolute high-precision wavelength setting option
- ✓ Auto-Relock function
- ✓ Single solid etalon

## Applications

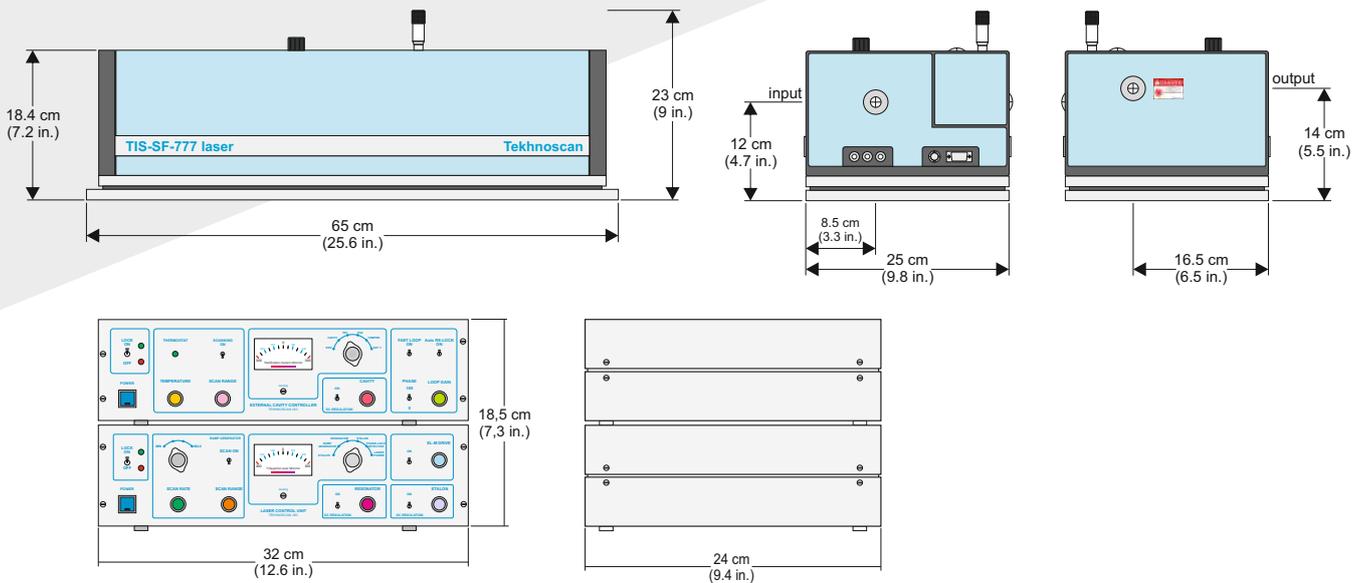
- ✓ Cooling, BEC and manipulating atoms
- ✓ High-resolution spectroscopy
- ✓ Tasks requiring low amplitude noise
- ✓ Doubling, Raman & parametric conversion
- ✓ Atomic clocks
- ✓ Optical metrology



## Laser Specifications

iFineTIS-07    iFineTIS-777

Line width, over 1 s rms	<b>&lt; 5 MHz</b>	<b>&lt; 10 kHz</b>
Line width, over 0,1 s rms	<b>&lt; 0,5 MHz</b>	<b>&lt; 1 kHz</b>
Output, W (10 W pump)	<b>&gt; 1.8</b>	
Wavelength range, nm	<b>700-1050</b>	
Smooth scanning, GHz	<b>5-30</b>	



Information and specifications contained herein are deemed to be reliable and accurate as of the publication date. Tekhnoscan reserves the right to change these specifications at any time without notice.

