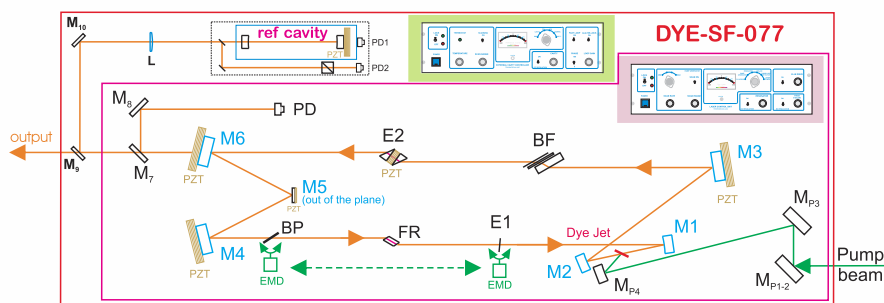


# Frequency-stabilised CW single-frequency ring Dye laser by Tekhnoscan



**Dye laser DYE-SF-077** is the first representative of the **new contemporary generation of dye lasers** that offer to the user virtually the same level of convenience and simplicity of operation as with a solid-state tuneable laser. Similarity of this laser to a solid-state one is emphasized by the fact that DYE-SF-077 can be optionally shipped in the **combined configuration** which allows its operation as a Ti:Sapphire laser.

Laser model DYE-SF-077 features exceptionally narrow generation line width, which amounts to **less than 100 kHz**. DYE-SF-077 sets **new standard** for generation line width of commercial lasers.



Upon customer's order, laser DYE-SF-077 may be equipped with a **USB-compatible interface** for a desktop or a laptop connection used to remotely scan the generation line of the laser and to perform multi-channel data acquisition. Laser DYE-SF-077 also **may be shipped together with an atom cell** and a system for reduction of long-term generation line drift. Besides, laser DYE-SF-077 in combination with **highly-efficient resonant frequency doubler FD-SF-07** delivers several hundreds milliwatts of narrow-band UV radiation within the 285–350-nm range.

**Choose the necessary parameters and options of DYE-SF-077 and enjoy this modern and powerful laser system by Tekhnoscan!**

⊙ **Ultra-fine spectral resolution** in fundamental research and industrial applications.

⊙ **Super-selective action** on atoms and molecules.



⊙ **Many successful and time-proven technical solutions** related to the cavity design were inherited by model DYE-SF-077 from Ti:Sapphire laser "TIS-SF-07" manufactured and shipped by Tekhnoscan since 2001.



⊙ **Rigid laser base-plate** with three invar rods in a volumetric configuration.

⊙ **Precision system** for adjustment of the pumping beam position.

⊙ Possibility of **direct pumping** (without any additional mirrors and/or spacers) by popular DPSS lasers, the centre of the input aperture of DYE-SF-077 laser matching that of a DPSS laser.

⊙ **Absolutely dry dye-jet laser**: the laser has a reliable shutter for the dye solution during powering up and switching off the circulation system.

⊙ In order to generate highly stable dye solution jet in laser DYE-SF-077 an **optimised sapphire nozzle** is used, which also ensures high jet speed at minimal input pressure.



# DYE-SF-077

## Frequency-stabilised CW single-frequency ring Dye laser

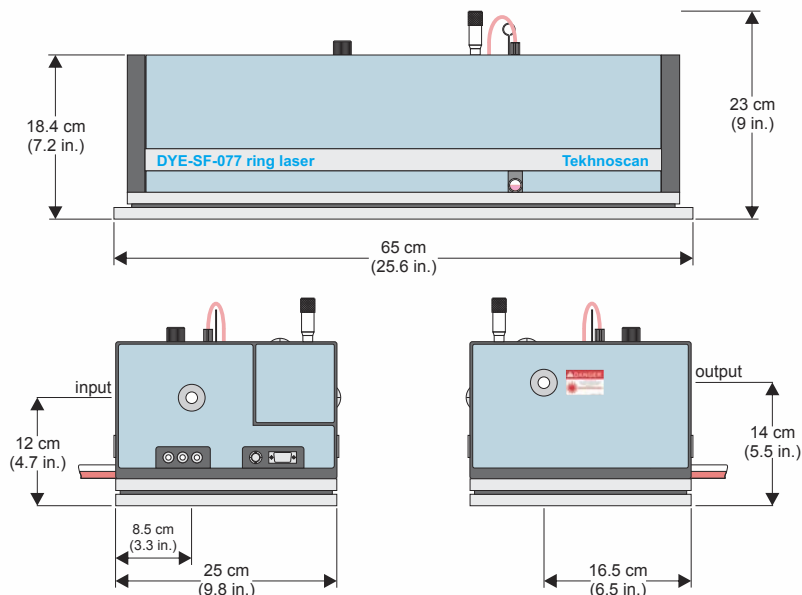
### Specifications:

Wavelength range	570-620 nm 620-700 nm
Output	> 1.5 W at 10 W pump
Linewidth	< 100 kHz rms <sup>1</sup>
Frequency drift	< 30 MHz/hour <sup>2</sup>
Smooth scanning	> 6 GHz <sup>3</sup>
Spatial mode	TEM <sub>00</sub>
Polarization	horizontal

1. relative to the reference cavity
2. < 1 MHz/hour with frequency stabilisation to an atomic/molecular line (optionally)
3. up to 20 GHz (optionally)

#### Options:

1. 20 GHz smooth scanning;
2. 285-350 nm wavelength range with Resonant Frequency Doubler "FD-SF-07"
3. Absolute Frequency Stabilisation to an atomic/molecular line
4. + Ti:Sapphire laser (linewidth < 15 kHz) in the same Laser head



#### TEKHNOSCAN Joint-Stock Company

Sirenevaia 37, k. 141, Novosibirsk, 630058, Russia  
Tel./fax: +7-(383)-339-72-24, email: service@tekhnoscan.com

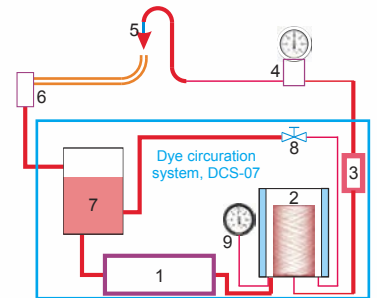
#### Representative in USA:

#### Del Mar Photonics, Inc.

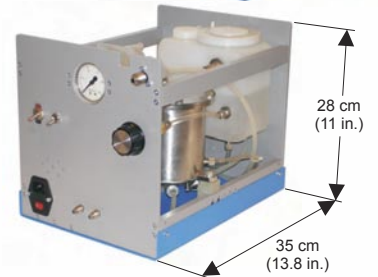
4119 Twilight Ridge, San Diego, CA 92130

Tel: (858) 876-3133, fax: (858) 630-2376, e-mail: sales@dmphotonics.com

#### DYE-SF-077 dye circulation system



- 1 - magnetically-coupled gear-type pump
- 2 - dampener-filter-heat exchanger
- 3 - filter
- 4 - auxiliary dampener
- 5 - sapphire nozzle
- 6 - down-comer
- 7 - reservoir
- 8 - by-pass valve for the actuating pressure adjustment
- 9 - pressure-gauge



⊙ **Compact and powerful system** of dye solution circulation with a leak-free magnetically coupled pump.

⊙ **Efficient system** for suppression of pressure fluctuations in the dye circulation loop.

⊙ **Reliable filtering system** for removal of air bubbles from the dye solution.

⊙ The dye solution circulation system of DYE-SF-077 is designed to make the **procedure of dye change convenient and clean.**

