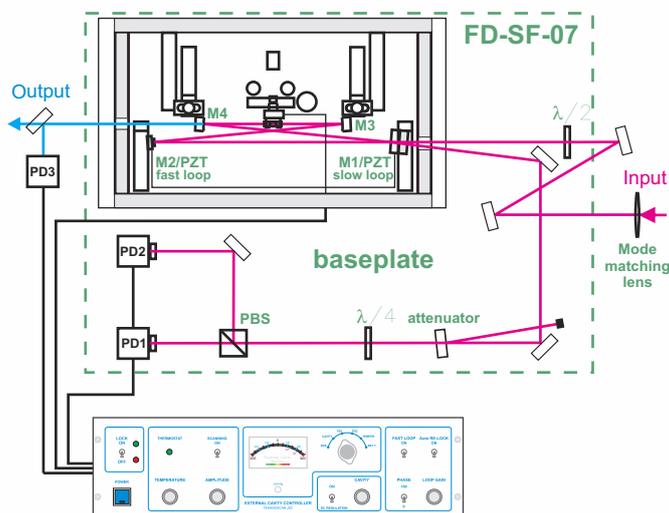


# Resonant Frequency Doubler for CW single-frequency lasers, model FD-SF-07

Tekhnoscan presents new resonant frequency doubler, model FD-SF-07, with **Smart Auto-Relock function** for CW single-frequency lasers (Ti:Sapphire, Dye, Ar, DPSS etc.) that opens a **new possibilities for more efficient laser wavelength conversion** in the visible and near IR ranges into the blue and UV domains. Optimised resonator of FD-SF-07 in combination with high-quality mirrors ensures relatively **high level of output second-harmonic power**. Pumped with 1 W fundamental radiation power the doubler outputs: more than 250 mW within the 350-475 nm range (for 700-950-nm input), > 200 mW within the 275-350 nm range (for 550-700-nm input), and > 150 mW within the 244-275 nm range (for 488-550-nm input).



The Smart Auto-Relock function allows FD-SF-07 doubler to smoothly track considerable changes in the frequency of the input radiation, thus the range of smooth second-harmonic frequency scanning **may cover dozens of GHz**, being only limited by the spectral acceptance of the non-linear crystal. The FD-SF-07 doubler is notable for its low acoustic noise and sensitivity to vibrations, as well as for the **simplicity of tuning and ease of use**. Super-stable and compact ring cavity combined with ultra-fast two-stage system that locks the cavity to the frequency of the input radiation by the Hansch-Couillaud method are a guarantee for **high stability of the output power** of the second harmonics even for lasers without a frequency stabilisation. In combination with the Smart Auto-Relock function the electronic control system of FD-SF-07 ensures **fail-safe operation** of the doubler in a variety of experimental conditions.

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⊙ Improved doubling efficiency up to 40% at the input radiation power 1 W

⊙ Power-enhancement factor up to 130

⊙ Rigid and stable, easily aligned cavity with vibration isolation



⊙ Fast two-stage system of locking the cavity to the frequency of input radiation

⊙ Possibility of efficient operation with lasers without frequency stabilisation

⊙ Solid ultra-stable performance even under conditions of considerable external acoustic perturbations and vibrations

⊙ Thermo-stabilised non-linear crystal



⊙ A separate control photo-detector included into the standard set of the electronic unit

⊙ Convenient express-access to the alignment of the non-linear crystal through a special easily removable lid