

FD-SF-07

Resonant Frequency Doubler for CW single-frequency lasers



1

SUPERIOR LOCKING

3

MOST EFFECTIVE CONVERSION

2

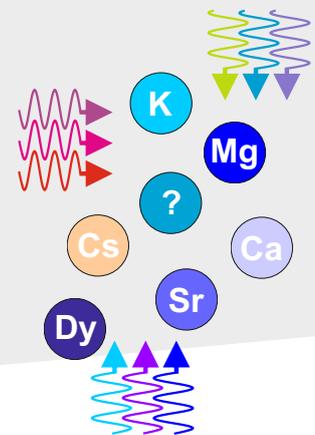
ULTRA-STABLE

4

AUTO-RELOCK FUNCTION

Tekhnoscan presents resonant frequency doubler, model FreDoubl, with Smart Auto-Relock function for CW single-frequency lasers (solid-state, fiber, dye, 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 FreDouble in combination with high-quality mirrors ensures relatively high level of output second-harmonic power.

The Smart Auto-Relock function allows FreDoubl 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 FreDoubl 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.



Features

- ✓ Ultra-fast system of locking the cavity to the frequency of input radiation
- ✓ Ultra-stable performance even under conditions of considerable external vibro-acoustic perturbations
- ✓ Superior doubling efficiency up to 40% at the input radiation power 1 W
- ✓ Power-enhancement factor up to 130
- ✓ Possibility of efficient operation with lasers without frequency stabilisation

Applications

- ✓ Cooling, BEC and manipulating atoms
- ✓ High-resolution spectroscopy
- ✓ Tasks requiring UV-blue ultra-narrow linewidth source
- ✓ Fourth harmonic generation
- ✓ Spectrally high-selective short wavelength technologies
- ✓ Optical metrology

Doubler Specifications

Conversion efficiency for 1 W CW single-frequency input:

700-950 nm: > **25%**

550-700 nm: > **20%**

400-550 nm: > **15%**

Contacts

Tekhnoscan - Lab
Inzhenernaia Str., 26,
Novosibirsk, 630090 Russia

Technology Park of Novosibirsk
Akademgorogok

+7 383 214-00-09
+7 383 363-69-12(14)
+7 383 363-69-13
service@tekhnoscan.com

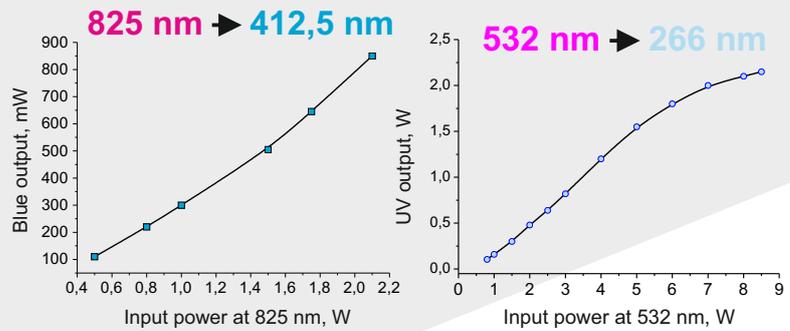
www.tekhnoscan.com

HT Laser UG
Feldstiegenkamp 2
48159 Münster, Deutschland

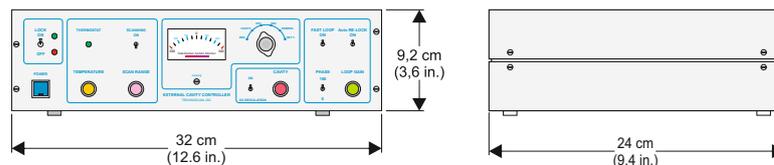
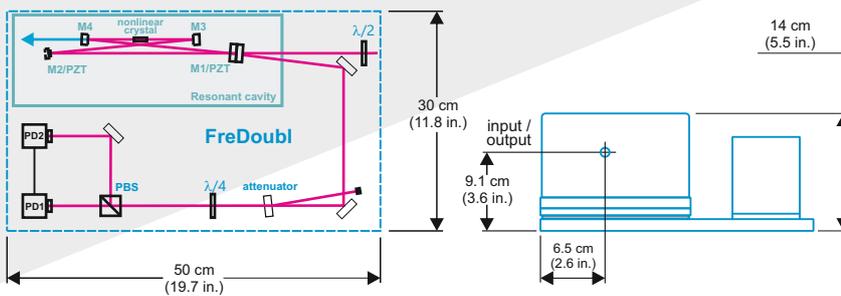
Tel: 025 132373444
Fax: 025 349746853

info@htlaser.de
www.htlaser.de

Typical input/output curves →



Dimensions:



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.

