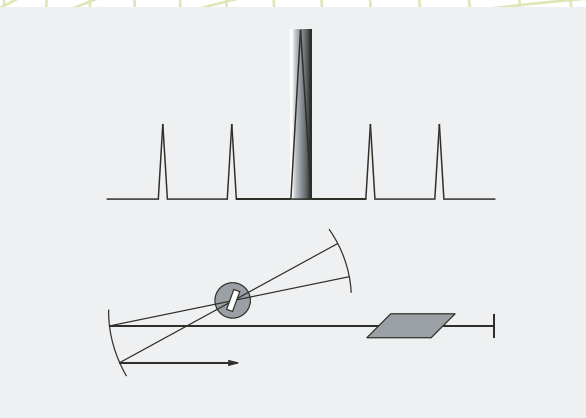


A P E

CAVITY DUMPER KIT



The **Cavity Dumper Kit** is an acoustooptical switch that can be integrated in the cavity of a modelocked laser system for the reduction of the system's pulse repetition rate. Unlike with pulse pickers the intracavity operation increases the pulse energy to a multiple of the energy that is reached by the normal modelocked pulses of the system. This makes it particularly relevant for nonlinear optical processes like SHG and THG

The **Cavity Dumper Kit** consists of an acoustooptical Bragg cell to be integrated in the laser cavity and the PulseSwitch control electronics. As an option APE offers a mounting kit for holding the Bragg cell which provides all the necessary tools for adjusting the modulator.

Out of a seed input signal with the repetition rate of the modelocked system the control electronics generate the RF carrier frequency for the Bragg cell. An internal frequency divider allows for division rates between 1:20 and 1:5000 of the seed frequency (optional: 1:2 ... 1:260000). External triggering and therefore single pulse operation is possible, as well. The phase of the RF signal is fine tuned by a phase shifter as a preposition for using the cavity dumper in double pass operation.

Generation of powerful laser pulses

Fast rise time

Tunable phase shift

Suitable for a variety for different Ti:Sa-, Ion- and dye lasers as well as other laser systems

Ultrafast Pulse Diagnostics

Wavelength Conversion

Pulse Management

Acousto-optics

Your Partner in Ultrafast

CAVITY DUMPER KIT

SPECIFICATIONS

Modulator

| | |
|------------------------|---|
| Material | fused silica |
| Required beam diameter | approx. 50 μm |
| Wavelength range | 500 ... 1000 nm, Brewster configuration ¹⁾ |
| Diffraction efficiency | > 50 % ²⁾ |

RF Driver

| | |
|--|---|
| Seed frequency (f_{seed}) ³⁾ | 50 ... 85 MHz (to be specified with ± 0.5 MHz accuracy at time of order) |
| Output repetition rate | single shot ... 3 MHz externally triggered $f_{\text{seed}}/20 \dots f_{\text{seed}}/5000$ with internal divider ($f_{\text{seed}}/260000$ optional) $f/2 \dots f/2600000$ |

| | |
|----------------------------------|-------------------------------|
| Carrier frequency | 350 ... 425 MHz ⁴⁾ |
| Electronical pulse rise time | 2 ns |
| Electronical pulse timing jitter | < 50 ps |
| RF phase shift tuning range | > 180° |

1) others optional

2) single pass at 800nm, 4MHz (varying with wavelength and repetition rate)

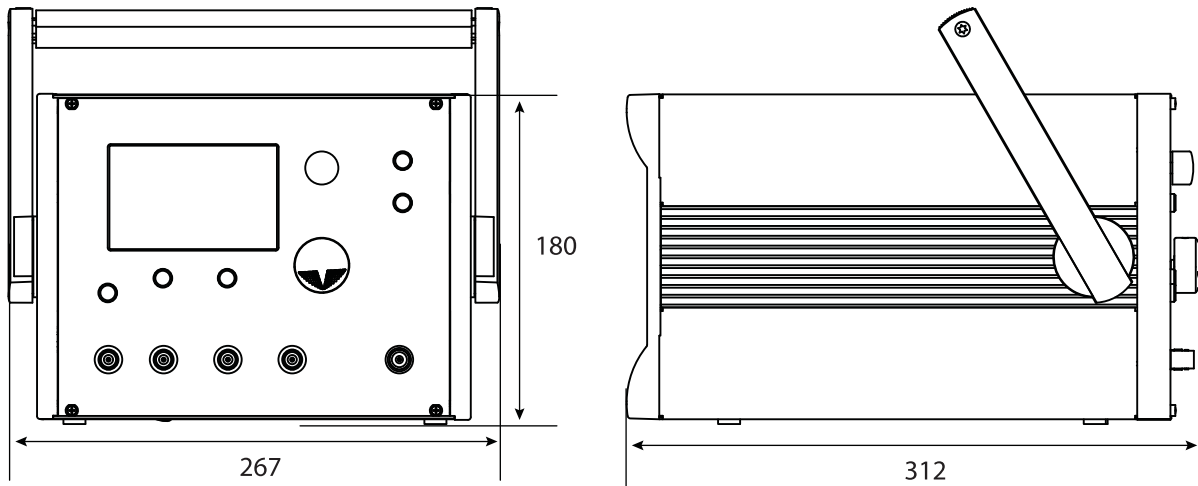
4) synchronization signal with the laser repetition rate from a fast photodiode is required

3) synchronized to seed frequency

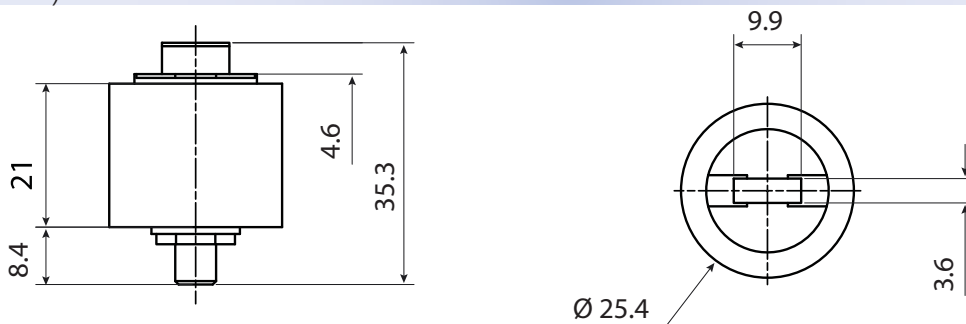
DIMENSIONS

Control electronics (W*H*D in mm)

267 x 180 x 312



Bragg cell (in mm)



Distributors

see APE website www.ape-berlin.com

APE GmbH Plauener Straße 163-165 Haus N / 13053 Berlin Germany

Phone +49.30.986.01130 Fax +49.30.986.011333 / Web www.ape-berlin.com Email ape@ape-berlin.de

APE follows a policy of continued product improvement. Therefore, specifications are subject to change without notice.