



# *pulseSelect*

The *pulseSelect* is an acousto-optical single pulse selector developed for the special demands of femtosecond laser technology. Pulse distortion is minimized by a low dispersive design and the use of reflective optics. The use of an acousto-optical selection element allows for high repetition rates and high contrast ratio.

The pulse repetition rate can be reduced by using an adjustable internal frequency divider or by external triggering. With the *pulseSelect* low division ratios down to  $f_{\text{REP}}/2$  are possible. It has an integrated RF power limitation and protection circuit to prevent modulator damage. For highest stability the phase of the RF carrier frequency is locked to the repetition rate of the laser that is used with.

Besides the standard version suited for fs or ps mode-locked Ti:Sapphire lasers, custom wavelength ranges in the VIS are available.

For improved contrast ratio of above 6000:1 A.P.E. offers the double stage version *pulseSelect DUAL* (seriell) and for selecting pulses from two synchronized laser sources simultaneously the *pulseSelect DUAL parallel*.

- Reduction of the repetition rate of mode-locked lasers
- Low dispersion
- Suitable for fs and ps mode-locked lasers
- Division ratios down to  $f_{\text{REP}}/2$  (optional)



	Standard	HP-Ti:Sa	HP-Ti:Sa Dualband
Wavelength	500 ... 1600 nm (other ranges optional)	680 ... 1080 nm	680 ... 1080 nm and 340 ... 540 nm
Max. laser input power ( $P_{AV}$ )	< 2 W ( $\text{SiO}_2$ ) <sup>1)</sup> < 0.5 W ( $\text{TeO}_2$ ) <sup>1)</sup>	< 5 W ( $\text{SiO}_2$ ) <sup>1)</sup>	< 5 W ( $\text{SiO}_2$ ) <sup>1)</sup>
Diffraction efficiency	> 60 % ( $\text{TeO}_2$ ) <sup>2)</sup> > 50 % ( $\text{SiO}_2$ ) <sup>2)</sup>		
Contrast ratio	> 500:1 <sup>3)</sup>		
Input frequency ( $f_{REP}$ )	70 ... 85 MHz		
Option	25 ... 100 MHz (others on request) (to be specified with $\pm 0.5$ MHz accuracy at time of order)		
External trigger	single shot to 3 MHz input		
Input polarization	horizontal (polarization rotator optional)		
Division ratio	$f_{REP}/20 \dots f_{REP}/5000$ ( $f_{REP}/2 \dots f_{REP}/260000$ optional) or externally triggered		

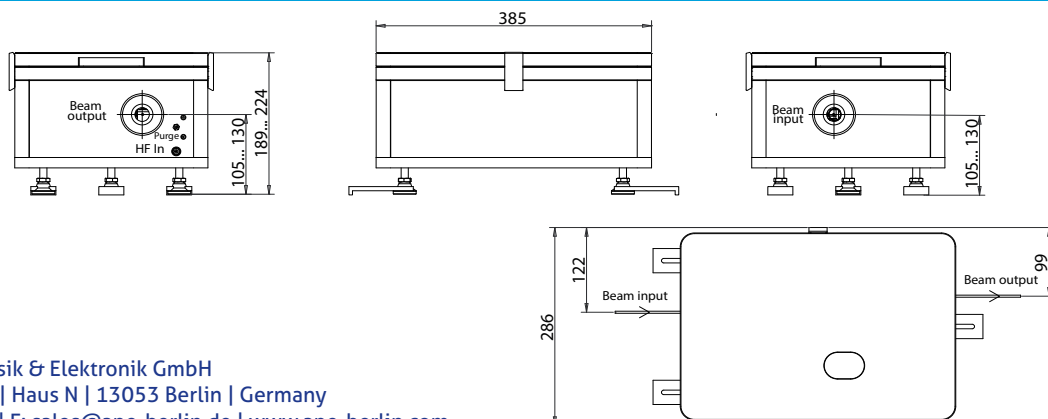
- 1) These values depend on the laser spot diameter in the crystal or mirror coating and for the type of Bragg cell indicated and thus apply only for to certain system configuration. Please consult our technical staff to determine the maximum input power level as well as the appropriate focussing for the beam parameters applicable for your laser system setup.
- 2) Ratio of the diffracted pulse energy to the pulse energy incident into Bragg cell. Measured with a fast photodiode at 800 nm and division ratio  $f_{REP}/20$ . At division ratio  $f_{REP}/2$  the efficiency is typically around 25 % ( $\text{TeO}_2$  Bragg cell) and around 10 % ( $\text{SiO}_2$  Bragg cell), respectively.
- 3) > 500:1 applies for non-adjacent pulses. Main pulse to adjacent pulse contrast ratio is > 75:1 (@ 800 nm  $f_{REP}/20$ )

## Option

- Double stage version *pulseSelect DUAL* (seriell)
- Double stage version *pulseSelect DUAL* parallel

## Dimensions (in mm)

Control electronics: 267 x 180 x 312 (W x H x D) (not depicted)  
Optical head: see below



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A-P-E follows a policy of continued product improvement.  
Therefore, specifications are subject to change without notice.  
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