

# *pulseSelect* Dual

The *pulseSelect* Dual is a single pulse selector using two acousto-optical Bragg cells.

The *pulseSelect* Dual comes in two variants:

## *pulseSelect* Dual (serial)

This version is designed to allow for highest contrast ratio of above 6000:1 by placing two Bragg cells, both synchronized to common clock, in serial configuration (i.e. one beam through two Bragg cells).

## *pulseSelect* Dual parallel

This version is designed for selecting pulses from two synchronized laser sources, e.g. with different wavelength, simultaneously by placing two Bragg cells, both synchronized to one common clock with one common division ratio but independent delay settings, in parallel configuration (i.e. two separate beams each through one Bragg cells).

The *pulseSelect* Dual has been developed for the special demands of femtosecond or picosecond 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.

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



	Standard	HP-Ti:Sa	HP-Ti:Sa Dualband
Wavelength	500 ... 1600 nm	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>
Input frequency ( $f_{REP}$ )	70 ... 85 MHz		
Option	25 ... 70 MHz   85 ... 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	linear / horizontal (polarization rotator optional)		
Division ratio	$f_{REP}/20 \dots f_{REP}/5000$ ( $f_{REP}/2 \dots f_{REP}/260000$ optional) or externally triggered		

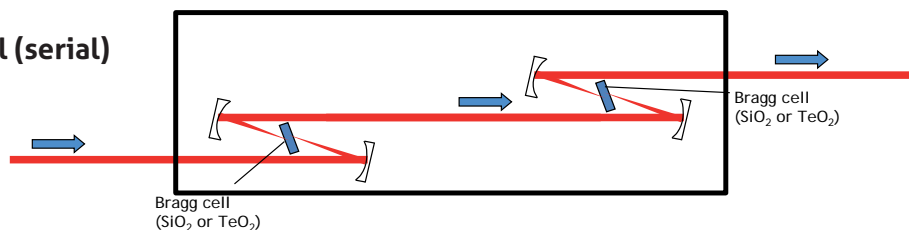
	<i>pulseSelect Dual (serial):</i>	<i>pulseSelect Dual parallel:</i>
Diffraction efficiency	~ 25% ( $\text{SiO}_2$ ) <sup>2)</sup> ~ 36% ( $\text{TeO}_2$ ) <sup>2)</sup>	> 50 % ( $\text{SiO}_2$ ) <sup>2)3)</sup> > 60 % ( $\text{TeO}_2$ ) <sup>2)3)</sup>
Contrast ratio	> 6000:1	> 500:1 <sup>4)</sup>

- 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 a 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 at 800 nm and division ratio  $f_{REP}/20$ .
- 3) 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.
- 4) > 500:1 applies for non-adjacent pulses. Main pulse to adjacent pulse contrast ratio is > 75:1 (@ 800 nm  $f_{REP}/20$ )

## Dimensions (in mm)

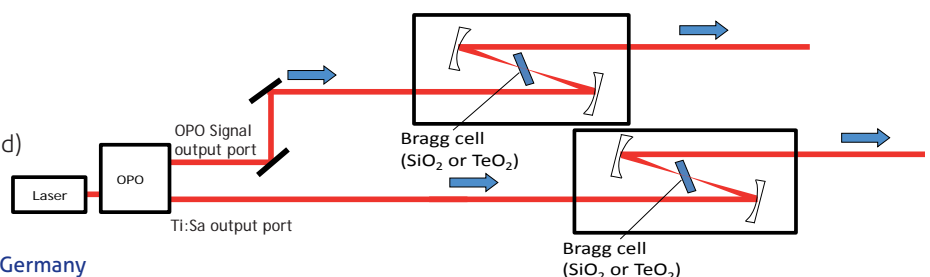
Control electronics:	267 x 180 x 312 (W x H x D) (not depicted)
Optical head: <i>pulseSelect Dual (serial)</i>	390 x 189 ... 224 x 580 (W x H x D)
<i>pulseSelect Dual parallel</i>	286 x 189 ... 224 x 385 (W x H x D)

### *pulseSelect Dual (serial)*



### *pulseSelect Dual parallel*

sample input configuration  
(laser, OPO, and beam routing not included)



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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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