ULTRAFAST PULSE PICKER – UP2

Features

- Pulse picking rate up to 2 MHz

UP2 pulse picker consists of built-in drivers, Pockels cell, high contrast ratio polarizers, beam dump and other optical components necessary for pulse picking application. The UP2 pulse picker in setup with pMaster 4.2 generator is able to select pulses at up to 2 MHz rate from max 100 MHz repetition rate pulse train. UP2 comes with BBO or KTP Pockels cell which are set for quarter wave or half wave voltage operation depending on the laser wavelength and required minimal clear aperture of the Pockels cell.

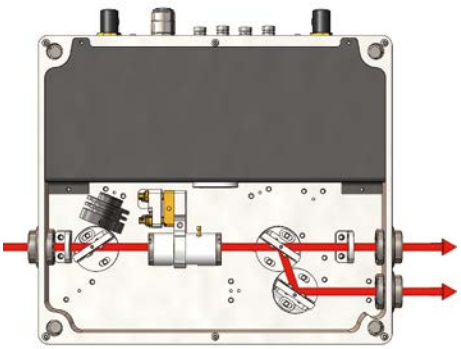
KTP Pockels cell's usage is limited by the average power of the laser beam – up to 2 W and contrast ratio is typically >1:500. While BBO Pockels cells operate at much higher power levels and feature higher contrast ratio – typically >1:1000.

Specifications of **UP2** pulse picker units

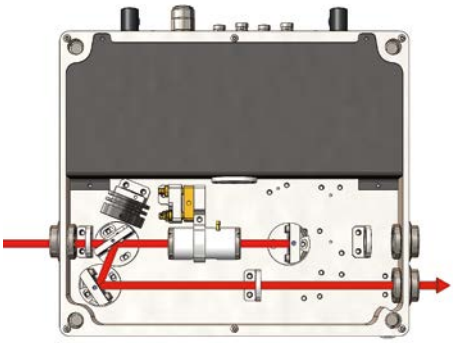
PULSE PICKER	UP2-BBO-3.5	UP2-BBO-2.5	UP2-KTP-5.5	UP2-KTP-3.5
Built-in-driver, max operating rate	up to 1 MHz	up to 2 MHz	up to 1 MHz	up to 2 MHz
Max laser repetition rate for single pulse picking	100 MHz			
HV power supply	provided in pMaster 4.2			
Operation	quarter-wave, λ/4		half-wave, λ/2	
HV pulse duration	0 – 5000 ns			
HV pulse rise time, typical	< 7 ns			
HV pulse fall time, typical	< 7 ns			
Pockels cell contrast ratio, VCR	1 : 500			
Pockels cell transmission	> 98 % at 1064 nm		> 98 % at 800 nm	> 98 % at 1064 nm
Clear aperture	Ø3.5 mm	Ø2.5 mm	Ø5.5 mm	Ø3.5 mm
Cooling	water			
Dimensions (L × W × H)	240 × 275 × 59 mm			

UP2 can be set for operation at standard laser wavelengths (1064 nm, 1030 nm, 800 nm) or at any specific laser wavelength in the range from 500 to 2000 nm.

Suggested operation schemes



Single pass (half-wave) operation scheme



Double pass (quarter-wave) operation scheme

Note. Additional components – Faraday rotator, λ/2 waveplate and polarizer are required for safe operation of the laser when pulse picker is used in double pass configuration. See suggested scheme at page 26 .

Suggested configurations

CODE	DESCRIPTION
UP2-BBO-3.5 + pMaster 4.2	Ultrafast pulse picker for up to 1 MHz operation, BBO clear aperture Ø3.5 mm, λ/4 operation at 1064 nm. Pulse synchronization and delay generator, 4 output channels for trigger pulses with built-in High Voltage supply
UP2-BBO-2.5 + pMaster 4.2	Ultrafast pulse picker for up to 2 MHz operation, BBO clear aperture Ø2.5 mm, λ/4 operation at 1064 nm. Pulse synchronization and delay generator, 4 output channels for trigger pulses with built-in High Voltage supply
UP2-KTP-5.5 + pMaster 4.2	Ultrafast pulse picker for up to 1 MHz operation, KTP clear aperture Ø5.5 mm, λ/2 operation at 800 nm. Pulse synchronization and delay generator, 4 output channels for trigger pulses with built-in High Voltage supply
UP2-KTP-3.5 + pMaster 4.2	Ultrafast pulse picker for up to 2 MHz operation, KTP clear aperture Ø3.5 mm, λ/2 operation at 1064 nm. Pulse synchronization and delay generator, 4 output channels for trigger pulses with built-in High Voltage supply