

# Pockels Cells

Pockels cell is an electro-optical modulator for polarization control of the laser beam. The key element of the Pockels cell is an electro-optical crystal, which produces or changes birefringence, when high voltage is applied to it. Induced birefringence or refractive index modification in the material by the electric field is called electro-optic effect or Pockels effect. Electro-optic effect is observed only in non-centrosymmetric crystals.

Typical applications of Pockels cells are Q-switching of laser cavity, laser cavity dumping, pulse picking, light coupling into and from regenerative amplifier, continuous wave laser beam chopping.

## KTP / RTP POCKELS CELL – PCK / PCR

### Features

- Lower operating voltage required compared to other types of Pockels cells
- Operates at high duty cycles
- Very low piezo-electric resonances
- Standard apertures: 4x4 and 6x6 mm
- Thermally compensated double-crystal configuration

PCK/PCR series Pockels cells developed at EK SMA Optics are based on specially grown high resistivity KTP or RTP crystals. The outstanding feature is possibility to operate KTP/RTP Pockels cells at high duty cycles or even to keep at high voltage for longer.

KTP/RTP Pockels cells can be supplied in standard one inch housing or in open-type OEM mount when small footprint is required.



PCK4 / PCR4

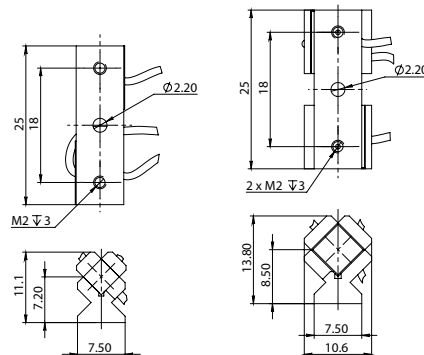
### Applications

- Q-switching for high repetition rate lasers 1 kHz – 6 MHz
- Pulse picking of high repetition rate lasers

### Specifications

MODEL	PCK4	PCK4-O	PCK6	PCK6-O
Clear aperture, mm	Ø3.5		Ø5.5	
Quantity of crystals	2			
Half-wave voltage (@ 1064 nm), kV DC	< 1.8		< 2.8	
Capacitance, pF (typical)	4		< 6	
Optical transmission	> 98 % at 1064 nm			
Contrast ratio	> 1:500			
Cell size, mm	Ø25.4x42.2	25x11.1x7.5	Ø25.4x42.2	25x13.8x10.6

Specifications are subject to change without advance notice.



PCK4-O drawing

PCK6-O drawing



PCK4-O / PCK6-O