

Pockels Cells STPCR STPCS



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Pockels Cells

A high-speed modulator that changes the phase delay of transmitted light by driving voltage

Pockels cell is a modulator of polarized light designed based on the Pockels effect. It is a key component in the laser cavity Q-switching, pulse selection, and regenerative amplification system, and one of the best choices for intensity, phase, and frequency modulation in laser processing and detection equipment.

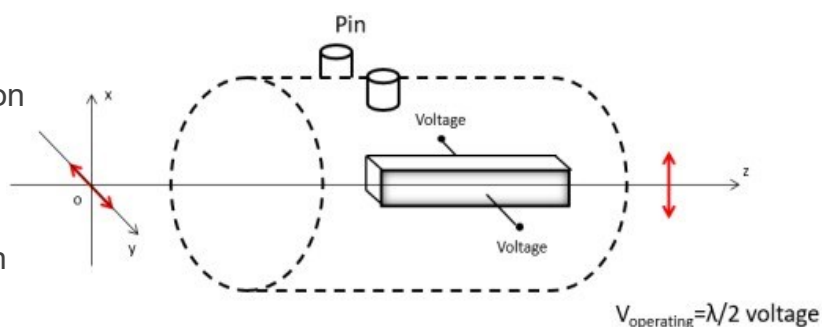
SIMTRUM offers the Pockels cell with high repetition frequency, weak ringing, high damage threshold, and low loss qualities based on foreign advanced technology. By designing a reliable structure and electrode, as well as effective thermal management, we can reduce the external environment influence and the loss of high-frequency signals in the transmission process significantly, improving the reliability of the device. All of this makes it very applicable for high-frequency and high-energy laser systems.

SIMTRUM has developed Pockels cells including DKDP, BBO, RTP, and KTP series, covering the frequency range from Hz to 60 MHz, and the performance reaches the international equivalent level. DKDP series use the transverse or longitudinal electro-optic effect, covered with a wavelength range from 300nm to 1300 nm, the required voltage of the transverse can be controlled within 100 volts and the diameter of the longitudinal can reach 15 mm; BBO series used in the range of 250-1650 nm, the required voltage from 100 volts to thousands of volts; RTP series used in the range of 350-3500 nm, and its frequency can reach to 100 kHz, aperture up to 10 mm; KTP series selects the hydrothermal KTP to solve "spot nevus discoloration" phenomenon.

Matched drive for Pockels cell can be provided, as well as accessories such as wave plate, polarizer, adjusting frame, etc.

Applications

- Laser Q switch
- Laser frequency modulation
- Pulse selection
- High-speed gate
- Regenerative amplification
- Polarization rotation



Product Specifications

General Specifications	
Interaction Material	BBO / KDP
Operating Wavelength	515 ~ 1064 nm
Polarization	Linear, perpendicular or horizontal to Pin
Transmission	> 98% ~ 99.2%
Active Aperture*	3.0 ~ 10 mm
$V_{\lambda/4}$ **	150 ~ 3800 V
Voltage Contrast Ratio ***	> 300:1 ~ > 1200:1
Shell Material	Plastic / Ceramics
Cooling	Conduction-cooled / Water-cooled

* The beam diameter is recommended to be less than 70% of the clear aperture.

** The voltage range $<\pm 10\%$

*** The optical path extinction ratio of 4000:1

Selection Guide

Ordering Information

	Material		$V_{\lambda/4}$		Active aperture		Wavelength
STPCR 0001 -	X	-	XXX	-	XXX	-	XXXX
BBO	B	4kV	040	3 mm	030	1030 nm	1030
KD*P	D	5kV	050	4 mm	040	1064 nm	1064

Product Code	Wavelength	Clear Aperture*	Transmission	Voltage Contrast Ratio***	$V_{\lambda/4}$ **	Cooling
STPCR2005-D002-030-515	515 nm	3.0 mm	> 98%	> 300:1	150 V	Conduction-cooled
STPCR1003-D035-100-1030	1030 nm	10 mm	> 98%	> 1000:1	3500 V	Conduction-cooled
STPCS2001-R035-100-1064	1064 nm	10 mm	> 98%	> 100:1	3500 V	Conduction-cooled
STPCR1001-B038-040-1064	1064 nm	4.0 mm	> 99.2%	> 1200:1	3800 V	Conduction-cooled
STPCR1005-B015-030-532	532 nm	3.0 mm	> 99.2%	> 1200:1	1400 V	Conduction-cooled
STPCR2001-B020-040-1030	1030 nm	4.0 mm	> 99%	> 1000:1	2000 V	Conduction-cooled
STPCR2002-B034-060-1030	1030 nm	6.0 mm	> 99%	> 1000:1	3400 V	Water-cooled
STPCR2004-K007-035-800	800 nm	3.5 mm	> 98%	> 500:1	700 V	Conduction-cooled

* The beam diameter is recommended to be less than 70% of the clear aperture.

** The voltage range $<\pm 10\%$

*** The optical path extinction ratio of 4000:1