Free-Space KD*P Electro-Optical Modulator

(3, 8, 10, 20mm aperture, 400nm to 2500nm)

DATASHEET

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Made with the highest purity, strain-free, and highly deuterated KD*P crystals, the KDPM series Pockels cells provide high optical damage resistance performance. The KDPM is packaged within ceramic housing, sapphire windows, and nitrogen-filled moisture-resistant sealings, ensuring high transmission and contrast ratios over its long lifetime. We offer three aperture sizes of 3mm, 8mm, and 10mm. The housing of the Pockels cell incorporates standard pin-type HV connectors that provide a quick connection for simplified system design and assembly. Polarization cubes can be aligned and installed at both input and output ports to form an intensity modulator.

Features

- High Power Damage Threshold
- High Extinction Ratio
- Low Capacitance
- High Speed
- High Transparency
- Wide Wavelength Range

Applications

- Q-Switch
- Phase/Power Modulation
- Pulse Picker

Specifications

Parameter		Min	Typical	Max	Unit
Wavelength Range [1]		400		600	nm
		600		900	
		900		1250	
		1250		1650	
		1800		2500	
Clear Aperture [2]		3	8	20	mm
Halfwave Voltage [3]	532nm		3300		V
	1064nm		6400		
Material Purity		99.8			%
Transmission		98			%
Extinction (on/off) [4]		20		35	dB
Rise/Fall Time (10-90%)		0.5		1.1	ns
Angle Tolerance (perpendicularity)			± 0.15		Degree
Parallelism		5			"
Humidity (non-condensing)				65	%
Capacitance (dielectric constant e~13)			10		pF
Damage Threshold (@1064nm, 10ns, 10Hz)				10	GW/cm^2
Surface Scratch/Dig			20/10		mm
Operation Temperature		10		80	°C
Electrooptic Coefficients		r41=8.8		R63=25	pm/V

Notes:

[1]. These are standard AR coatings, custom AR coating is available with narrower band for lower loss

[2]. These are standard sizes, custom size is available with max length up to 25mm for lower driving voltage

[3]. This relates to crystal size; the smaller the aperture, and the longer the length, the lower the driving voltage

[4]. Measure at DC using two crossed polarizers

Rev 11/23/24

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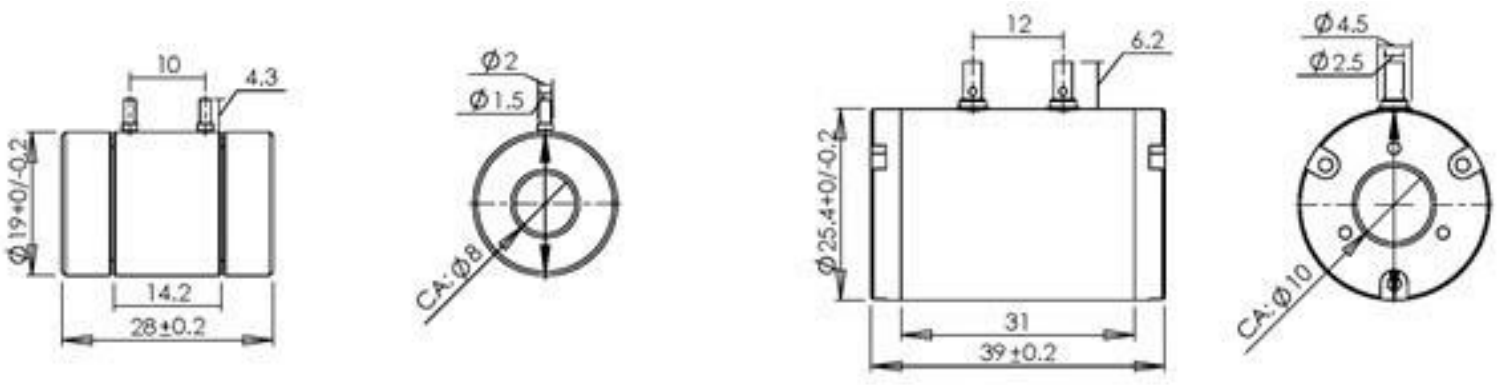
Warning

- Dort not use it, if you are not well trained.
- Do not look at. Even indirect exposure to high power laser light can cause eye damage.
- Do not touch it. The driving high voltage can cause serious injury.
- Do not clean the optical surfaces that cause damages
- Do not solder to the crystal that causes cracks inside.

Mechanical Drawing (mm) aperture 8mm and 10mm



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Ordering Information

	☐☐	☐	☐	☐	☐	☐	☐	☐
Prefix	**Wavelength**	**Aperture**	**Length**	**Grade[1]**	**Input Cube [2]**	**Output Cube [2]**	**Mounting**	**Driver**
KDPM-	400~600nm = 05 600~900nm = 07 900~1250nm = 10 1250~1650nm = 14 1800~2500nm = 15	3mm = 3 8mm = 8 10mm = A 20mm = B	25mm = A 35mm = B 50mm = C	Standard = S Premium = P Ultra = U	No = 1 Polacore = 3 PBS = 4 Glan-Thompson = 5	No = 1 Polacore = 3 PBS = 4 Glan-Thompson = 5	Non = 1 Yes = 2	Non = 0 Yes = 1

[1]. **Affect Intrisic Contrast Ratio, Electro-Optic Effect Uniformity, Defect Density (**related to the material selection from an as-grown crystal boule in which near center is the best**)**

[2]. **Polacore** (1060nm) – CW 10W/cm^2
PBS (1060nm) – CW 15W/cm^2
Glan-Thompson (1060nm) – CW 2kW/cm^2

P +1 781-935-1200 E sales@photonwares.com W www.agiltron.com

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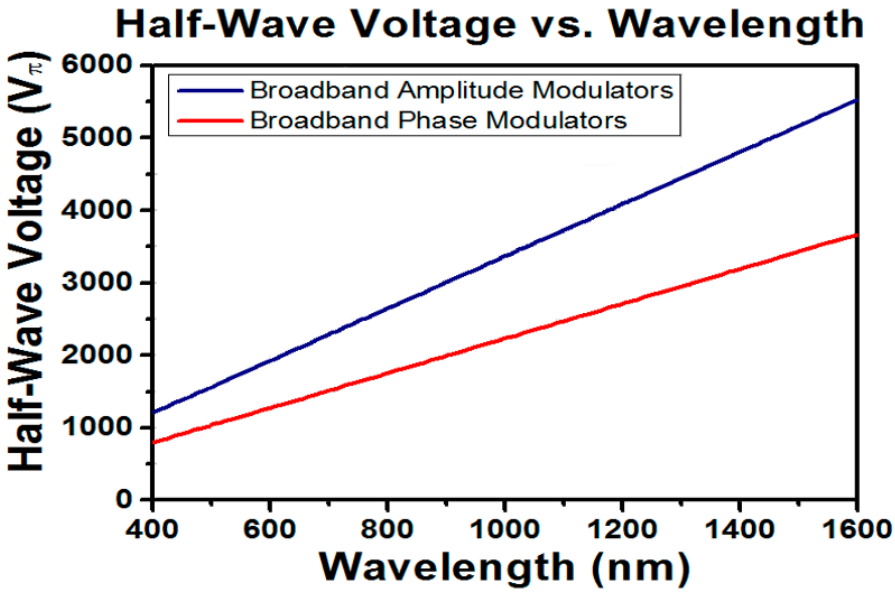
Modulator Half-Wave Voltage (example size)



Application Notes (Q-switch alignment)

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