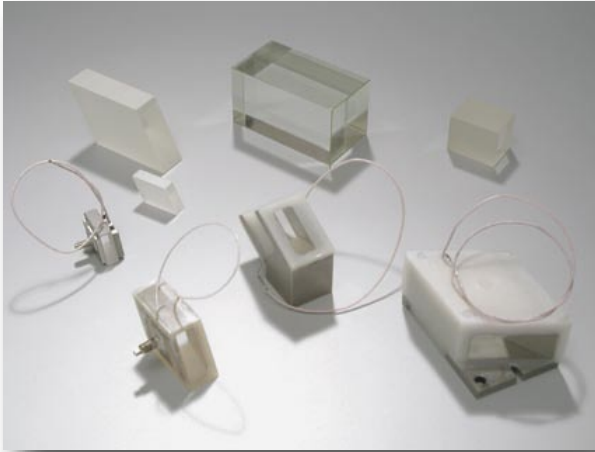


Solid-State Laser Components

Lithium Niobate Q-Switches



Lithium niobate - LiNbO_3 (LN) is traditional crystal for electrooptical modulator and Q-switches. We produce few types of electrooptical Q-switch elements for pulsed solid-state laser operating in near IR (1...3 μm). First group of LiNbO_3 elements is in the form of rectangular parallelepipeds. Planes YZ of an element are coated with conductive films to apply voltage. Antireflection coated element planes XY are used as laser radiation input and output one. Additionally, planes XY are covered with transparent conductive films to keep high contrast of Q-switches in spite of piroeffect. Laser beam is propagated along optical Z-axis, electric field is directed along X-axis of electro-optic element.

These Q-switches may be used in both-quarter-wave and half-wave schemes. Second group of Q-switch electrooptic elements has "Brewster-Brewster" (BB) geometry with faces cut off at Brewster angle to Z-axis. This configuration allows to provide expansion of input beam and to reduce power density on the elements surface. Input and output edges of these elements are coated with transparent conductive films only. Therefore, they may be used within wide near IR range without any modification. Specifications of base EO elements models are listed in the table.

PARAMETER	LN - 205	LN - 205B	LN - 204
Effective aperture, mm	3	5	8
Capacity, pF	40	50	50
Direct control voltage, kV	1,45*	1,8*	2,9**
Pulse control voltage, kV	2,9*	3,8*	6**
Transmission, %	97	96	92
Extinction ratio	>80	>80	>80
Damage threshold, J/cm ²	>2	>5	>5
Area of available temperature, C	+60...-60	+60...-60	+60...-60

* - quarter-wave voltage ** - half-wave voltage

DEL  **MAR PHOTONICS**

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