



Natural diamonds for high technologies

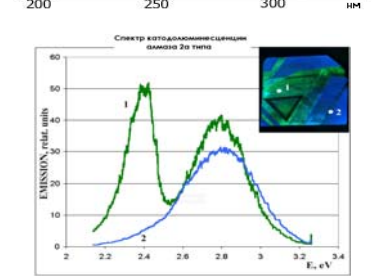
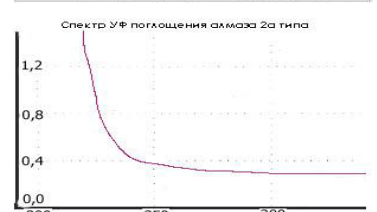
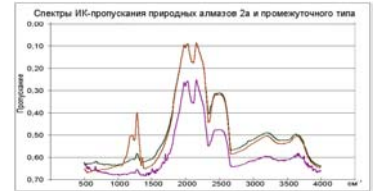
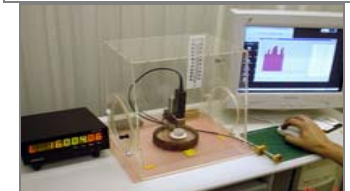
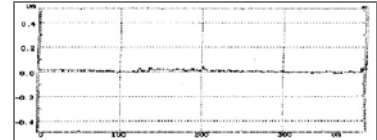
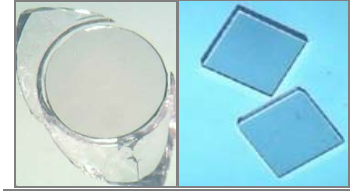
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DIAMOND PLATES,

SUBSTRATES and OPTICAL WINDOWS



PARAMETERS	BASIC CHARACTERISTICS
Shape	- our technology of processing of raw diamond plates includes mechanical, laser and thermo-chemical methods. Competent combination of different technologies allows us to produce plates of almost any shape (rectangular, round etc.)
Dimensions	- length or width from 0,5 to 5,0 ± 0,10 mm ; thickness from 0,10 to 1,50 ± 0,05 mm .
Roughness of working surfaces	our technology of precision polishing allows us to produce diamond plates having working surfaces with roughness Ra << 40 nm .
Flatness of working surfaces	- depends on dimensions of working surface, basically better than λ/5 .
Deviation from parallelism of working surfaces	- depends on dimensions of a diamond plate, basically better than 25 angle minutes .
Crystallographic orientation	- determination of crystallographic orientation is carried out using our unique house-made instrument – X-ray diffractometer RS-UA1. This device effectively measures deviation from the main crystallographic directions in a plate (111), (110), (100) with accuracy about several angle minutes .
Transmittance in IR range	- optical parameters of a diamond plate in IR range are determined by measurement of transmittance from 500 to 4000 cm⁻¹ . Registration of narrow bands of nitrogen allows to estimate concentration of impurities and to identify “nitrogen-free” diamond plates.
Absorption in UV range	- fundamental absorption edge of diamond which arrives to near 5,5eV or 225nm on UV absorption spectra, allows to estimate concentration of impurities and to identify “nitrogen-free” diamond plates.
Concentration of impurities	- C(N)_A < 5x10¹⁹ at/cm³ .
Optical anisotropy	- isotropic or with first degree of internal stress
Photoluminescence	- inert or weak under λ= 365 и 254 nm excitation.
Cathodoluminescent topography	- homogeneity of diamond plates is determined by method of cathodoluminescent topography .
Spectral cathodoluminescence	- spectral distribution of cathodoluminescent emission is determined by Spectral cathodoluminescence method.
Electrical resistance	>10¹²Ohm-cm
Thermal conductivity	> 20 W/cm-K



For more information & quotations, please contact:
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