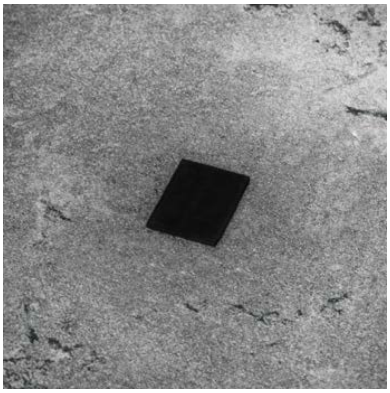
WD Advanced Materials

Authorized Distribution Partner

Hi-Rel



CONDUCTIVE GRADE CVD DIAMOND

Boron-doped laser-cut or polished low-stress substrates for use in nano-indentors, deep-UV LEDs, diodes, and other semiconductor devices, among other conductive diamond applications.

> High-performing P-type conductive diamond wafers
> Available at scale to exact customer sizing and polish requirements
> Bulk Material or Epitaxial Film / Coating per customer specifications

MATERIAL SPECIFICATIONS	
Hardness	>8 MPa·m
Crystal Structure	Cubic
Lattice Constant	3.567 Å
^{13}C Fraction	1.1%
Orientation	*Primary:* (100) or (111)
	Secondary: (100) or (110)
Dimensions	Square and round
	Up to 10mm *(length, width)*
	0.300-1.0mm *(thickness) (other values available upon request)*
Roughness, Ra	Laser Cut, Optical Polish (<20nm Ra), Epi-Ready Polish (<5nm Ra)
Appearance	Blue to Black
Carrier Concentration	$>1x10^{20}cm^3$ *(lower values upon request)*
Electrical Conductivity	Resistivity values below 0.01 Ω-cm

All diamond substrates are grown at the WD Advanced Materials facility in the United States. For custom requests and to discuss capabilities outside of the specifications noted here, please reach out to your account management team at the Hi-Rel Group.