



High Purity Germanium

The high-purity germanium detector, which is using high-purity germanium crystal as the detection medium, has the advantages of superior energy resolution, wide energy measurement range, and high detection efficiency. It has a broad application prospect in the fields of dark matter detection, nuclear power, material science, trace element analysis and security inspection. Vital Optics Technology (VOT) is committed to continuously innovating and developing the production technology of the high-purity germanium crystal and detector, and provides customers with the best solutions.

Product Highlights

Net Carrier Concentration	$<2 \times 10^{10} \text{ cm}^{-3}$
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Transport Properties - Hall mobility μ_H

p-type μ_H	$\geq 10\,000 \text{ cm}^2/\text{V.s}$ (Center measurement)
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n-type μ_H	$\geq 10\,000 \text{ cm}^2/\text{V.s}$ (Center measurement)
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Deep Levels (measured by DLTS)

p-type	$\text{Cu}_{\text{tot}} \leq 4.5 \times 10^9 \text{ cm}^{-3}$
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n-type	Deep level point defects $< 5 \times 10^8 \text{ cm}^{-3}$
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Crystallographic Perfection

	p-type	n-type
Dislocation density (EPD, cm^{-2})	$\leq 10\,000$	$\leq 5\,000$
Lineage (unit length = slice radius)	≤ 4	≤ 3
Mosaic structures (unit surface = 10 mm^2)	≤ 6	≤ 3
Saucers (cm^{-2})	≤ 500	≤ 500