



Product Information



PGT NIGC SERIES N-TYPE EXTENDED RANGE HIGH-PURITY GERMANIUM COAXIAL DETECTORS



The NIGC extended range detectors are the best choice for applications involving both X-ray and high-energy gamma-ray spectroscopy in the same sample, or where a neutron flux is present. PGT N-type coaxial detectors are useful in the energy range 3 keV to 10 MeV. A beryllium entrance window and a thin ion-implanted outer contact on the crystal allow collection of characteristic X-rays from all but the lightest elements.

These detectors exhibit excellent timing characteristics and are appropriate with anti-Compton shielding. The combination of a PGT N-type detector with a scintillating annulus allows for the greatest reduction of Compton contribution to spectral background.

Germanium detectors subjected to a neutron flux will be damaged. Damage to the crystal lattice creates hole trapping centers. Since N-type detectors collect electrons, they are the best choice for use in conditions of high particle flux. PGT N-type detectors have operated flawlessly in high altitude and outer space applications where these conditions exist.

The standard endcap has a 2.5 inch diameter beryllium window (0.02 inch thick) with excellent transmission for energies above 3 keV. An aluminum window can be furnished in place of beryllium for use in rugged environments over the energy range 20 keV to 10 MeV.

For ultra-low background applications PGT offers oxygen-free high conductivity (OFHC) copper endcaps, ultra-low background aluminum, IF-1 beryllium entrance windows and plastic entrance windows. The NPR cryostat, with or without internal lead shielding, maintains the lowest level of background interference available.

An optional neutron damage repair kit allows repair of N-type detectors in the lab after neutron irradiation.

Standard Features:

- N-type high-purity germanium, with ion-implanted exterior surface and lithium diffusion center contact
- Vertical dipstick cryostat
- 30 liter dewar
- Aluminum endcap with beryllium window
- RG-11 B/C resistive feedback preamplifier
- 12-ft. bias, signal and power cables
- Unlimited temperature cycling without loss of resolution

Options:

- Portable and mechanically cooled systems
- A large variety of cryostat configurations
- Low-background materials such as OFHC copper and plastic window
- Ultra-low background beryllium windows
- Transistor reset preamplifier for high count rates (Energy count-rate product limit of >800,000 MeV/sec)
- Ultra-low microphonic QUIET-ONE™ crystal mounting
- Neutron Radiation Damage Repair Kit

NIGC Series Detector Specifications

Model Number	Relative Efficiency	Resolution (FWHM)		Peak/Compton	Peak Shape FWTM/FWHM
		@5.9 keV (eV)	@133 MeV (keV)		
NIGC10180	10%	665	1.80	40:1	1.90
NIGC10190	10%	715	1.90	39:1	1.95
NIGC10200	10%	735	2.00	38:1	2.00
NIGC15185	15%	675	1.85	44:1	1.90
NIGC15190	15%	715	1.90	42:1	1.95
NIGC15200	15%	735	2.00	40:1	2.00
NIGC20190	20%	690	1.90	48:1	1.90
NIGC20195	20%	750	1.95	46:1	1.95
NIGC20200	20%	790	2.00	44:1	2.00
NIGC25190	25%	690	1.90	50:1	1.90
NIGC25195	25%	760	1.95	48:1	1.95
NIGC25200	25%	790	2.00	46:1	2.00
NIGC30190	30%	715	1.90	54:1	1.90
NIGC30200	30%	825	2.00	52:1	2.00
NIGC30210	30%	850	2.10	48:1	2.00
NIGC35195	35%	775	1.95	55:1	2.00
NIGC35210	35%	830	2.10	52:1	2.00
NIGC35220	35%	900	2.20	50:1	2.00
NIGC40195	40%	800	1.95	59:1	2.00
NIGC40210	40%	850	2.10	54:1	2.00
NIGC40220	40%	925	2.20	52:1	2.00
NIGC45200	45%	825	2.00	60:1	2.00
NIGC45210	45%	850	2.10	57:1	2.00
NIGC45220	45%	900	2.20	55:1	2.00
NIGC50220	50%	860	2.20	58:1	2.00
NIGC50230	50%	900	2.30	56:1	2.00
NIGC55220	55%	900	2.20	60:1	2.00
NIGC55230	55%	1000	2.30	58:1	2.00
NIGC60220	60%	1100	2.20	60:1	2.00
NIGC60230	60%	1200	2.30	58:1	2.00
NIGC70230	70%	1100	2.30	60:1	2.00
NIGC70240	70%	1200	2.40	58:1	2.00

Contact PGT for quotes on other sizes/resolutions

Applications:

- Low level environmental counting across a broad energy range
- Pb-210 / sediment analysis
- Bio-Assay
- Timing experiments
- High neutron flux physics applications
- Portable neutron activation analysis

For More Information Contact:

Princeton Gamma-Tech, Inc.
1026 Rt. 518
Rocky Hill, NJ 08553
Tel: (609) 924-7310
Fax: (609) 924-1729
Web Site: www.pgt.com
e-mail: nuclearsales@pgt.com

