



First Sensor

## Product Announcement X100-7

*First Sensor announces the new X100-7 detector for gamma radiation. It is based on First Sensor's low dark current and low capacitance silicon photodiode series.*

With its active area of 100 mm<sup>2</sup> it provides a large cross section for radiation detection. A special black epoxy encapsulant guaranties the blocking of light while maintaining small gamma ray attenuation (see Figure 2).

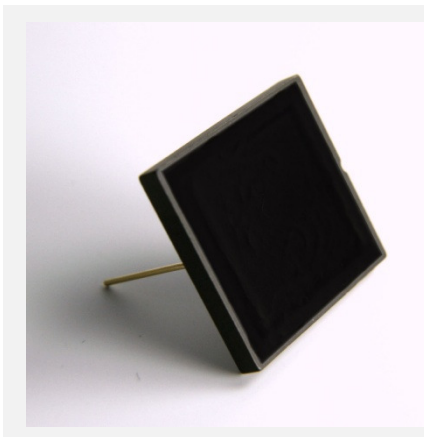


Figure 1: X100-7 Detector

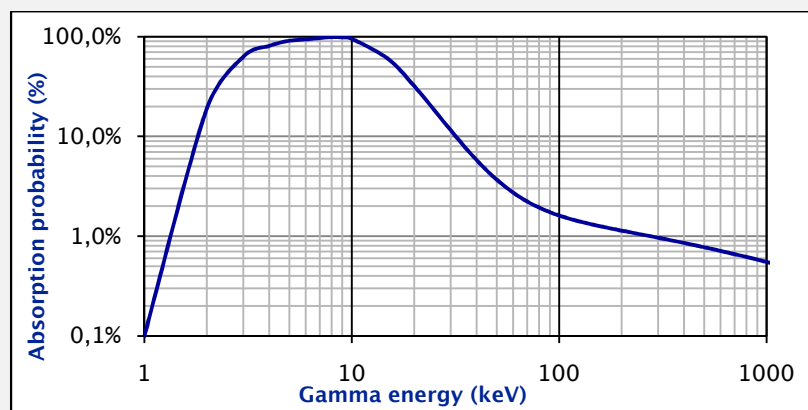


Figure 2: Absorption probability curve of gamma radiation in X100-7 detector

Recent events like the nuclear disaster in Japan have raised awareness of risks from nuclear radiation and created a demand for commercial as well as personal radiation detection devices. Nuclear radiation meters based on silicon solid state detectors such as the X100-7 provide a reliable and inexpensive solution for radiation monitoring.

Specifically, gamma radiation from Iodine-131 (364 keV) and Cesium-137 (662 keV) is used to identify contamination from the Fukushima disaster. High performance solid state



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radiation detectors use the conversion of nuclear radiation into visible light by a costly scintillator crystal. However, inexpensive detectors rely on direct absorption in the silicon.

Since the probability of direct absorption of such gamma energies in silicon is relatively low, large area, low capacitance and low noise detectors such as the X100-7 are essential.



Figure 3: Radiation monitoring with conventional Geiger counter

First Sensor offers the X100-7 both in a ceramic SMD package as well as a ceramic 2-pin THD package in sample quantity up to high volume production. Custom specific options including thicker silicon, fully depletable chip designs or scintillator coupled devices are available upon request. Please contact us for further details.

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