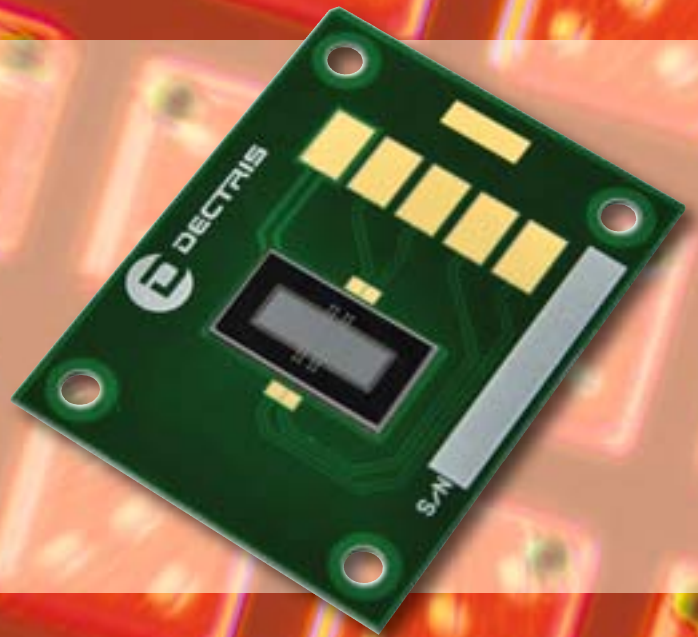


XBPM **4**

**Real-time X-ray beam
position monitor for
synchrotron beamlines**

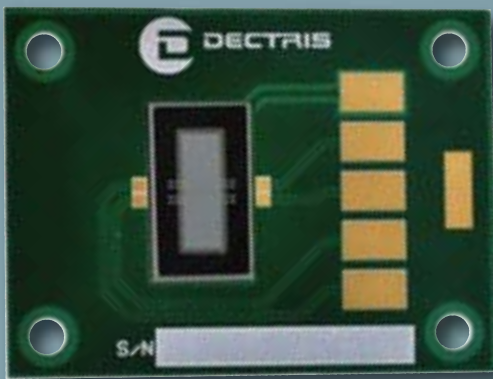


XBPM 4

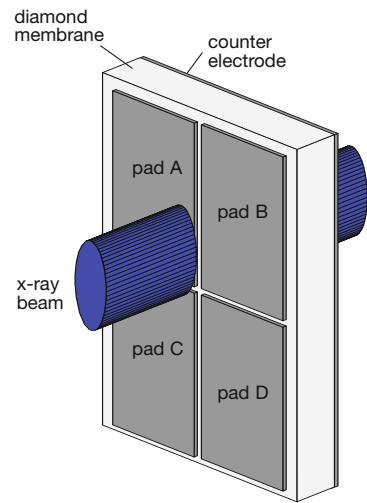
The XBPM 4 is a 4-quadrant beam position monitor suited for hard X-ray synchrotron beam lines. It is ultra-high-vacuum (UHV) compatible, can remain continuously in the X-ray beam and allows monitoring the position of the X-ray beam in real time with a sub-micron precision. The XBPM 4 is available with two different active areas to fit into most beamlines and is very simple to install and to operate.

Principle:

The XBPM 4 is based on a very thin CVD diamond membrane. The transmission of the X-ray beam generates charge carriers in the diamond layer and hence a photocurrent is induced. With an external picoampere meter, this photocurrent can be measured for each pad. The difference of photocurrent between pads over the total current gives the signal, which can be calibrated to provide position information.



Complete XBPM 4 module: hybrid carrier with CVD-sensor and contact pads



Working principle of the XBPM 4

Applications:

- Beam intensity monitoring after monochromator
- Automatic beamline alignment after change of diffractometers
- Online feedback
- Pink beam monitoring

Key features:

- Sub-micron resolution
- Time resolution of <1ms
- Very low X-ray absorption
- Excellent thermal and mechanical properties
- UHV compatible
- Radiation hard

Advantages:

- Permanent in-situ X-ray beam position monitoring
- no maintenance
- simple installation and operation

DECTRIS Ltd.
Neuenhoferstrasse 107
5400 Baden
Switzerland
+41 56 500 2120 phone
+41 56 500 2101 fax
info@dectris.com
www.dectris.com



Technical specifications

Sensor	CVD diamond membrane
Sensor thickness	10 μm
Transmission	97% at 5 keV
Framing rate	~1 kHz (depends on read-out setup)
Bias voltage	~10 VDC
Large area XBPM4-L	
Pad size	4.5 x 1.5 mm
Gap between pads	20 μm
Total active area	9.0 x 3.0 mm
Window size	9.6 x 3.6 mm
Small area XBPM4-S	
Pad size	2.0 x 1.0 mm
Gap between pads	12 μm
Total active area	4.0 x 2.0 mm
Window size	4.6 x 2.6 mm
Cooling	Not required
Dimensions	~ 40 x 30 mm
Weight	~ 10 g