SINGLE CRYSTAL X-RAY DIFFRACTION

IμS DIAMOND II Microfocus X-ray Source

Twice the intensity, proven reliability

The new Incoatec IμS DIAMOND II once more pushes the limits in microfocus source technology for crystallography:

- Twice the intensity for faster data collection from smaller crystals
- Five-year typical tube lifetime with an average intensity outperforming rotating anodes.
- Nearly instantaneous automated wavelength switching in dual wavelength configurations

The IμS DIAMOND II incorporates two major technical innovations:

- Hybrid metal-diamond anodes with isotopically pure diamond*). This permits a higher electron power density on the anode and hence a brighter X-ray source.
- New high-brightness cathode technology producing a more homogenous, higher current density electron beam to fully exploit the potential of the new isotopically pure diamond hybrid technology.

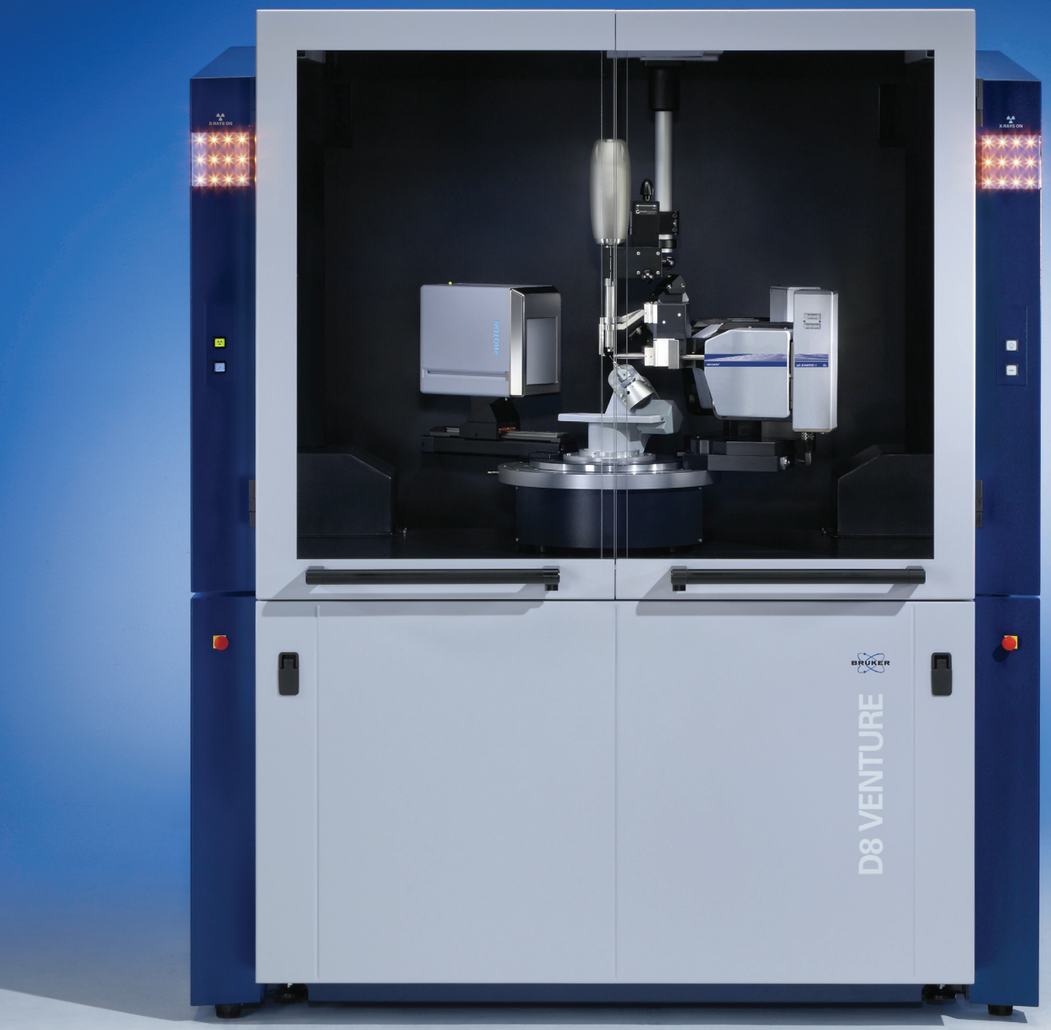
The new IμS DIAMOND II - Simply brilliant

All IμS tubes are designed, developed and manufactured exclusively by Incoatec. Indeed, Incoatec is the only company that makes microfocus tubes optimized for X-ray diffraction. These optimized tubes offer higher performance and higher quality, resulting in longer tube lifetimes.

*) patent US 10847336

IµS DIAMOND II Unprecedented brightness, stability, and reliability– without maintenance

The IµS DIAMOND II Microfocus Source is INCOATEC's latest advancement in X-ray source technology, delivering modern rotating anode performance without the headache of high running costs and without routine maintenance.



The IµS DIAMOND II - a strong family heritage

Since its introduction in 2006 more than 1700 IµS sources have been installed and over 96% of these are still operational. This makes the IµS both the world's most successful and the most reliable microfocus source. The enhanced performance of the fifth generation IµS DIAMOND II is coupled with all the operational advantages which have made previous IµS generations so successful:

- Air-cooling for unrivalled long-term stability with minimized installation requirements.
- Optimum anode take-off angle for crystallography for higher intensity at the sample and thus better data.
- Long tube lifetime, typically five years.
- No other routine maintenance required.

Dual wavelength perfected

Like previous generations, the IµS DIAMOND II can switch wavelengths nearly instantly under software control. In combination with the high intensity X-ray sources this enables a new experimental approach: For many crystals it is, prior to an experiment, not obvious which wavelength will give the best structure. Within a single experiment, the D8 VENTURE can measure the crystal at two wavelengths and provide two datasets that can then be investigated to determine which wavelength provides the best result.

Quality made in Germany

The IµS DIAMOND II is designed and manufactured in Germany by Incoatec for Bruker in compliance with ISO 9001. This strict quality management ensures the highest reliability, backed by a three-year warranty.

IµS DIAMOND II for for Cupper (Cu), Molybdenum (Mo), and Silver (Ag) radiation.

Intensity
Average intensity is significantly higher than that of a microfocus rotating anode source.

Optics
The best optics put all the X-rays on the sample for up to 10 times lower scattered X-ray background.

Maintenance costs
Maintenance free operation.

Uptime
Unique 99% uptime guarantee.

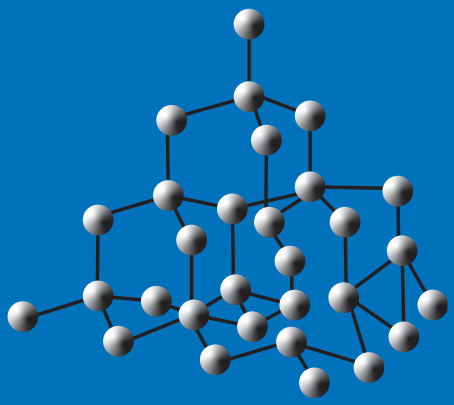
Reliability
It is an IμS – which means the highest reliability and longest tube lifetimes.

Operating costs
With low energy consumption and no cooling water, the IμS DIAMOND II is easy on your wallet and the environment.

Stability
10 times better stability than rotating anodes – for the best data quality.

Warranty Extension
Full coverage warranty extension ensures peace-of-mind. It includes part replacement and full system alignment, where you need it, when you need it – as often as you need it.

Isotopically pure diamond is synthesized from one single isotope of carbon, in the case of the IμS DIAMOND II pure ^{12}C. Isotopically pure diamond has the highest thermal conductivity of any known material.



Overview of Features and Benefits

Uptime	≥ 99%	High reliability, X-rays when you need them, where you need them
Intensity compared to microfocus rotating anodes	significantly higher average intensity	Best-in-class performance
Beam stability compared to microfocus rotating anodes	10 times more stable	
Power consumption	< 150 W, single phase power	Environmentally friendly
Cooling	No cooling water, air-cooled	
No routine maintenance	No moving parts under vacuum	Low costs of ownership

Bruker AXS
info.baxs@bruker.com

Worldwide offices
bruker.com/baxs-offices

Online information
bruker.com/sc-xrd

bruker.com