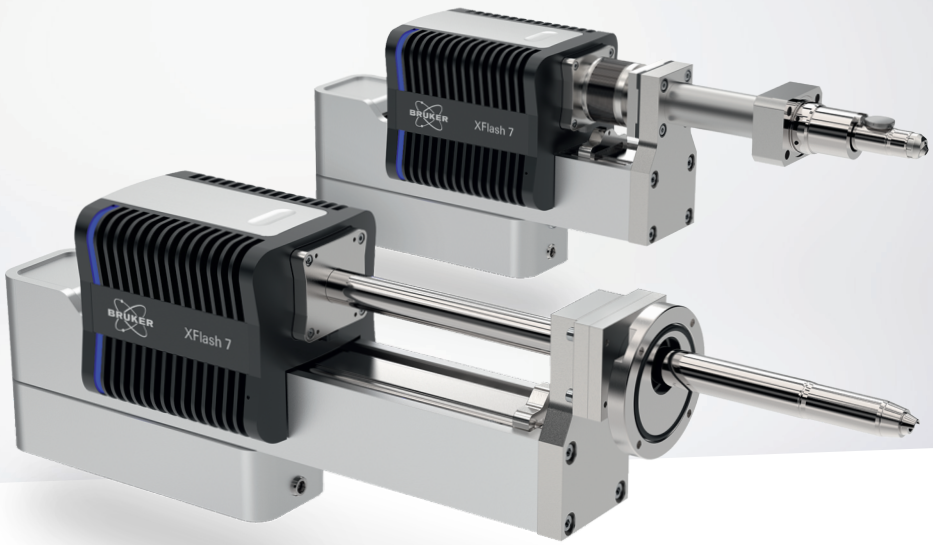


EDS

XFlash® 7

The latest detector generation for the QUANTAX EDS system

Get the best view on your sample

Bruker's latest generation of QUANTAX EDS systems feature the XFlash® 7 detector series, providing the largest solid angle, highest throughput and highest take-off angle for X-ray collection on electron microscopes. Combined with the modular ESPRIT software, QUANTAX EDS delivers the fastest and most reliable results and guarantees best data quality for your research.

The XFlash® 7 detector family once again sets standards in performance and functionality in energy-dispersive spectrometry for electron microscopes (SEM and TEM), Focused Ion Beam (FIB-SEM), and Electron Probe Micro Analyzers (EPMA):

- Highest efficiency due to slim-line technology, large collection angle design, latest generation of pulse processing
- Highest flexibility with a wide range of detector sizes and window options, offering ideal solutions for micro- and nanoanalysis
- Highest spectral performance with best energy resolution for light element and low energy analysis
- Highest accuracy of results by sophisticated quantification algorithms and a unique combination of standardless and standardbased methods

Make your element analysis more efficient

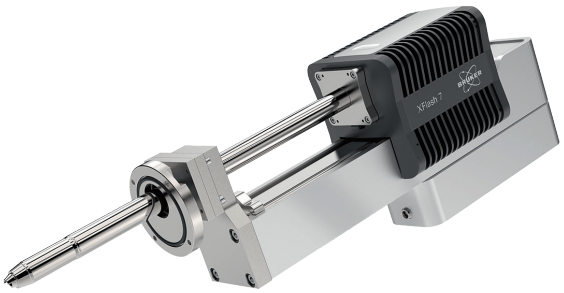
The XFlash® 7 detectors offer optimized analysis solutions for any type of electron microscope providing unmatched speed and precision. The modular concept of hardware and software makes it easy to extend your initial system with additional EDS and EBSD detectors as well as a micro X-ray source, giving total flexibility whatever you need now or in the future.

The seamless integration of four analysis techniques in the comprehensive ESPRIT software suite provides advanced solutions for any application. Dedicated solutions for TEM and STEM ensure best analytical performance on the nano and atomic scale.

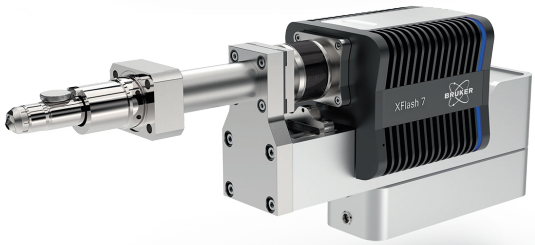
As part of the the XFlash® 7 detector family the unique XFlash® FlatQUAD detector with four annular arranged detector segments answers your questions on challenging applications, e.g., low kV, low beam current, surface topography.

XFlash® 7 Key Facts

- Large solid angle for X-ray collection, the largest being > 1.1 sr, enables the most efficient analysis of e.g. sensitive (biological) samples, which requires using low kV and low beam current
- Unmatched analysis speed – up to 1,000 kcps analytical throughput for fastest measurements and quantification in accordance with ISO15632:2021
- Highest precision and reliability of the quantification results using the most comprehensive atomic database with more than 2,200 element lines
- Thorough data mining (on- and offline) thanks to real-time hyper-spectral imaging and hybrid quantification routines
- Automation of time resolved and large area element mapping
- Maximized system uptime through SDD module exchange on site and reduced need for recalibrations due to high system stability



XFlash®7
QUANTAX EDS detector for SEM, FIB-SEM and EPMA



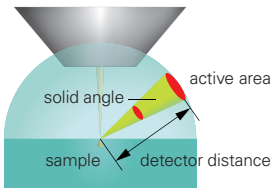
XFlash®7T
QUANTAX EDS detector for TEM and STEM

The Right Angles

Solid angle

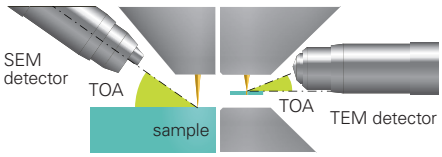
The geometric solid angle, which is in EDS called analytical collection angle, determines the portion of X-rays that can be registered. It is defined as the conical section out of an imaginary sphere around the radiation source (the fluorescent region of the specimen) which is covered by the active area of the detector.

The solid angle is measured in steradian (sr). In case of a non-sperical flat detector surface, it is roughly proportional to the active detector area divided by the square of the specimen-detector distance. A detector with a small active area placed close to the sample provides a better solid angle than a detector with a large active area placed at a longer distance.



Take-off angle (TOA)

The take-off angle is the mean angle between the specimen surface and the radiation entrance point into the detector. A higher TOA reduces absorption and shadowing effects as well as the sensitivity to surface contamination.



Get the right angle for better analysis with your XFlash® 7 detector.

Electron Microscope Analyzers
Bruker Nano GmbH
Berlin · Germany
info.ema@bruker.com

www.bruker.com/xflash7

All configurations and specifications are subject to change without notice.
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