



**Malvern
Panalytical**
a spectris company

XRD series

Panalytical X-ray Technology

Crystal orientation measurement



XRD series crystal orientation measurement

Si | SiC | Diamond | AlN | GaAs | Quartz | LiNbO₃ | BBO and 100s more.

Crystal Alignment in Production | Quality Control | Material Research | Ingots & Wafers

Established Azimuthal-Scan method

- Highest precision
- Measurement speed: < 10 secs/sample
- Integration into process line
- Typical standard deviation tilt (example: Si 100): < 0.003°, minimum < 0.001°



Omega/Theta (XRD)

Maximum precision, maximum versatility

- Transfer technology: orientation of multiple ingots for efficient cutting
- Simultaneous determination of all lateral directions
- Variety of sample holders and transfer fixtures towards wire saw, grinding etc.
- Automated 3D determination of geometric features like diameter and flat/notch position, shape, length, depth, etc.
- Rocking curve measurement



DDCOM (XRD)

Desktop XRD for production fabs and research institutes

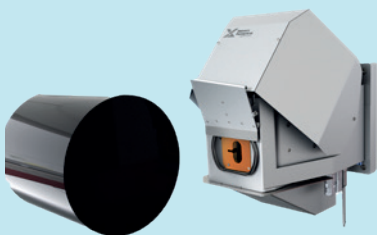
- Designed to measure wafers & ingots from 8 up to 225 mm Ø
- Reference plane is same as the measurement plane
- Marking option of lateral crystal direction
- No water cooling



SDCOM (XRD)

Desktop XRD for production and research institutes

- Ability to measure very small crystals down to 1 mm as well as large ingots
- Variety of sample holders and transfer fixtures towards wire saw, grinding, etc.
- Marking option of lateral crystal direction
- No water cooling



XRD-OEM

For fully automated production fabs

- Ready for integration into any automation or processing system
- Designed to fit into harsh environments like grinding and cutting machines
- Standard industrial interfaces
- Independent orientation measurement
- Measurements the flat and cylindrical surface of an ingot
- Optical notch and flat detection

Wafer XRD 200 / 300



Wafer XRD 200



Wafer XRD 300

Wafer XRD 200

Fast, precise and fully equipped: our solution for wafer end control

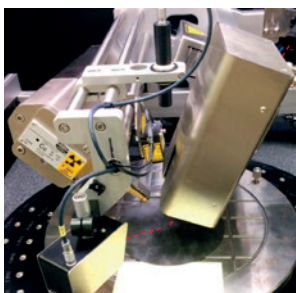
- Ultra-fast precision with proprietary scan technology
- Fully automated handling and sorting
- Easy connectivity with MES including SECS/GEM
- High precision, deeper insight
- Powerful and versatile wafer geometry sensor options
- Air or water cooled tube available

Wafer XRD 300

Your integratable wafer orientation solution

- Ultra-fast precision with proprietary scan technology
- Easy connectivity with MES including SECS/GEM
- High precision, deeper insight
- Powerful and versatile
- Optical flat/notch detection
- Ready for integration into your automated processing line

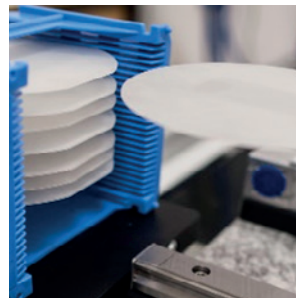
Additional functionalities



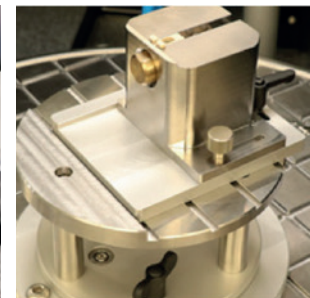
Wafer mapping



Ingot stacking



Automated wafer sorting



Small samples holders



About Malvern Panalytical

We draw on the power of our analytical instruments and services to make the invisible visible and the impossible possible.

Through the chemical, physical and structural analysis of materials, our high precision analytical systems and top-notch services support our customers in creating a better world. We help them improve everything from the energies that power us and the materials we build with, to the medicines that cure us and the foods we enjoy.

We partner with many of the world's biggest companies, universities and research organizations. They value us not only for the power of our solutions, but also for the depth of our expertise, collaboration and integrity.

We are committed to Net Zero in our own operations by 2030 and in our total value chain by 2040. This is woven into the fabric of our business, and we help our employees and customers think about their part in creating a healthier, cleaner, and more productive world.

With over 2300 employees, we serve the world, and we are part of Spectris plc, the world-leading precision measurement group.

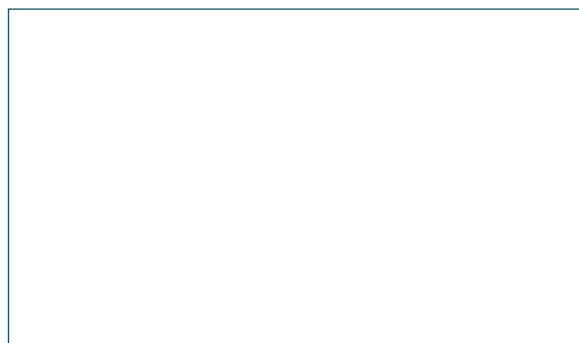
Malvern Panalytical. We're BIG on small™

Service & Support

Malvern Panalytical provides the global training, service and support you need to continuously drive your analytical processes at the highest level. We help you increase the return on your investment with us, and ensure that as your laboratory and analytical needs grow, we are there to support you.

Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response and maximum instrument uptime.

- Local and remote support
- Full and flexible range of support agreements
- Compliance and validation support
- Onsite or classroom-based training courses
- e-Learning training courses and web seminars
- Sample and application consultancy



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