

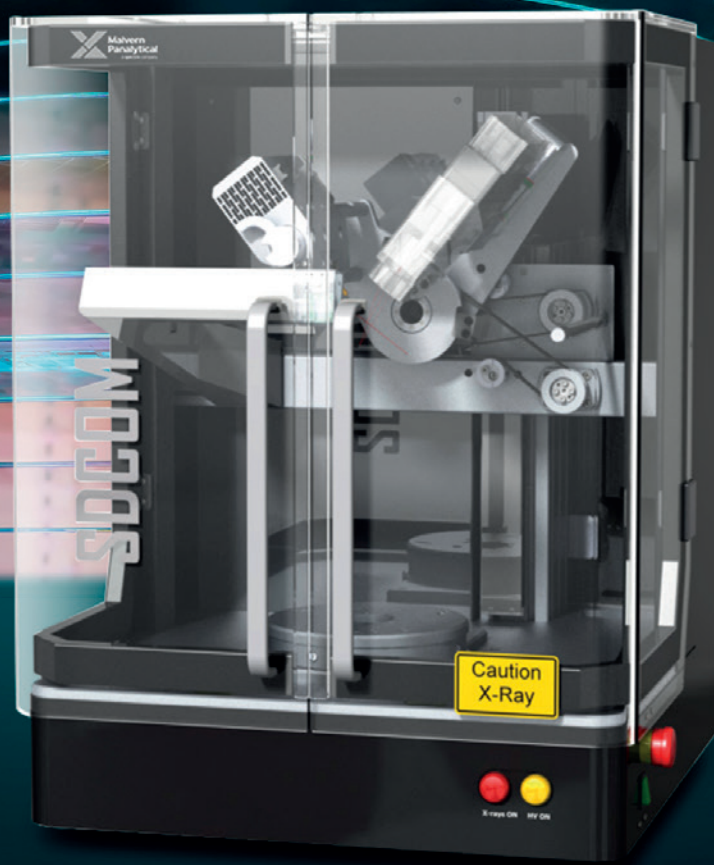


**Malvern
Panalytical**
a spectris company

SDCOM

Panalytical X-ray Technology

Smart diffractometer for crystal orientation measurements

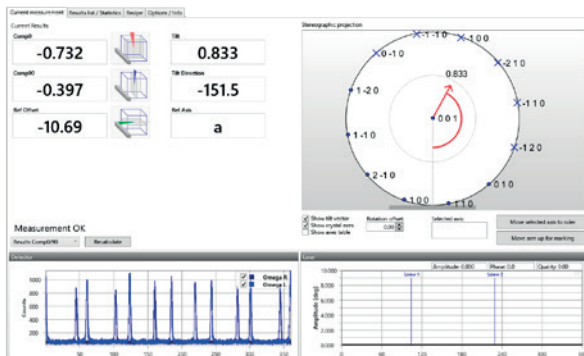


SDCOM smart diffractometer for crystal orientation measurements

A desktop XRD device for material research, production and quality control of single crystals (Ingots & Wafers).
Si | SiC | Diamond | AlN | GaAs | Quartz | LiNbO₃ | BBO | GaN and 100s more.

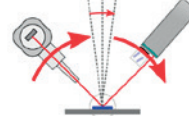
Features of SDCOM

- **Ultra-fast measurements:** all desired crystal orientation parameters are captured in one sample rotation i.e. within 10 seconds
- **Many samples sizes:** measures samples from 1 mm \varnothing up to 200 mm \varnothing
- **Fully automated analysis** and orientation determination of any single crystalline material
- **Typical standard deviation (Si 100):** <0.01° tilt magnitude, < 0.03° tilt direction
- **Uptime:** > 99%
- **Theta-scan capability:** for sophisticated research and material characterization
- **Transfer technology:** up to 6 orientated crystals on one cutting beam
- **Ready for integration** with MES like SECS/GEM

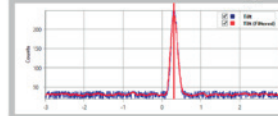


XRDStudio - operating and evaluation software

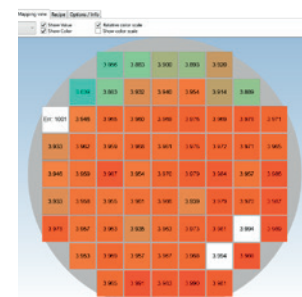
Tilt scan: $-3...+3^\circ$ scan range



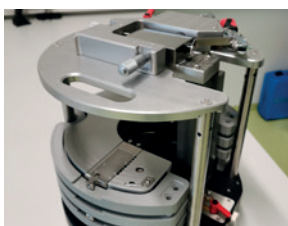
Direct measurement of the tilt angle:



Theta-scan



Mapping



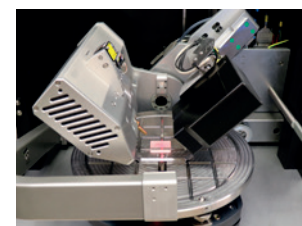
Multiple ingot stacking unit



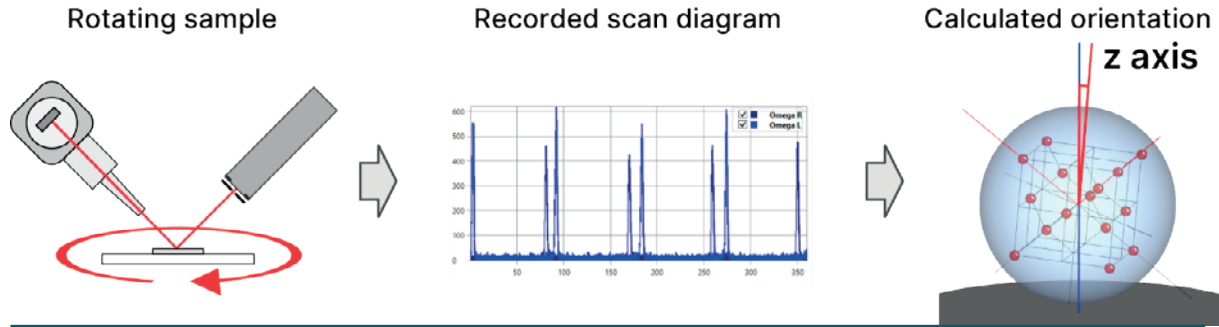
Vertical holder for small samples



Horizontal holder for small samples



Mapping stage



Few examples of measurable materials

- **Zinc blende structure:**
- Diamond, Si, Ge, GaAs, GaSb, GaP, InAs, InP, InSb, AlAs, AlP, AlSb, ZnTe, CdTe, SiC 3C, etc.
- **FCC metals:**
Ag, Au, Ni, Pt, etc.
- **Rock salt structures:**
NaCl, AgCl, PbS, PbTe, SnTe, MgO, LiF, etc.
- **Other cubic/special orientation:**
- Ag, Au, Ni, MgAl₂O₄, SrTiO₃, LaTiO₃, CaF₂, etc.
- **Tetragonal:**
MgF₂, TiO₂, SrLaAlO₄, etc.
- **Hexagonal / Trigonal:**
SiC (2H, 4H, 6H, 15R), GaN, ZnO, LiNbO₃, SiO₂ (quartz), Al₂O₃ (sapphire), GaPO₄, La₃Ga₅SiO₁₄, etc.
- **Orthorhombic:**
Mg₂SiO₄, NdGaO₃, etc.
- Ultra-fast measurement: < 10 s
- Determination of all tilt components in one rotation
- Absolute measurement, no calibration needed
- Integration of customized sample holders
- Specialized for manufacturing process of pre-defined material(s) quality control and data transfer in accordance with customer's demands
- Fully automated loading and unloading of samples (optional)
- MES or SECS/GEM interface (optional)

Technical specifications*

Specifications	
X-ray source	30 W air-cooled X-ray tube, Cu anode
Detectors	Two
Sample holder	Precise turntable, setting accuracy 0.01°, customized sample holders
Sample diameter	down to 1 mm \varnothing , up to 200 mm
Ambient temperature	$\leq 30^{\circ}$ C
Laptop or PC requirements	Windows 10 or latest, .NET Framework update, 2 Ethernet ports
Power requirements	100 to 230 V, single phase, 500 W
Dimensions	600 mm (L) x 600 mm (B) x 840 mm (H)
Weight	ca. 100 kg
Certification	manufactured under ISO 9001 guidelines, CE conform

* All technical parameters are subject to changes based on R&D



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.

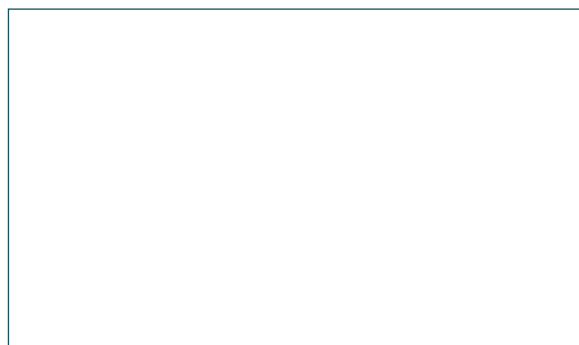
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Our worldwide team of specialists adds value to your business processes by ensuring applications expertise, rapid response and maximum instrument uptime.

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- Sample and application consultancy



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