

High Speed
High Accuracy
Desktop

XRD



X-Ray Diffractometer

Innovative, Integrated, Multifunctional

By using patented polycapillary optics this diffractometer obviates the need for monochromators and collimators for linear projection of X-Rays.

Available as easy-to-use transportable desktop unit, XMD-300 offers versatile design that integrates convenient handling of powder samples as well as large uneven and odd shaped samples into a compact desktop unit.

A cost effective analytical X-Ray tool for researchers, technologists, material scientists and quality control laboratories.

XMD-300

User Benefits



sample accessibility

- Compact and small device footprint
- High technology at affordable cost
- Low operating and near-zero maintenance costs
- No external water cooling system
- Precise X-Ray collimation
- No or minimal sample preparation
- Greater radiation safety
- Ease of operation
- Rapid XRD analysis
- Excellent sample visibility and accessibility
- Search-match facility for using ICDD PDF database

- Intensity gain of several folds is achieved due to deployment of patented polycapillary X-Ray optics
- Can be installed on a standard table-top adjacent to other analytical instruments
- Innovative XRD instrument for a wide range of material characterisation



Unique Technical Features

- Optimised beam collimation using patented polycapillary optics
- High intensity quasi-parallel beam formed by the polycapillary half-lens allows analysis of uneven sample surfaces
- Spinner for powder and textured/oriented samples
- No need for collimators for linear projection of X-Rays
- Air cooled low power X-Ray tube
- Rapid data collection utilizing high performance linear PSD detector
- Aesthetic and radiation-proof instrument console
- Transportable and compact design
- Quantitative phase analysis by RIR method when using ICDD PDF database



Intuitive interface

Applications

Ideal solution for a variety of industrial and research applications in the following areas:

- Mineralogical studies
- Materials research
- University and educational laboratories
- Pharmaceuticals
- Geology and mining
- Industrial by-products
- Engineering process and quality control
- Ceramics and refractories
- Environmental monitoring
- Alloys and process metallurgy
- Cement, chemical and fertilizer industries
- Forensic science
- Archaeology and art studies





Designed for your daily express XRD analysis

Software Features

The software system is a complete suite of applications including instrument control, data acquisition and data analysis. Integrated control features allow the user to constantly monitor the status of the instrument.

User-friendly software for RIR quantitative phase analysis.

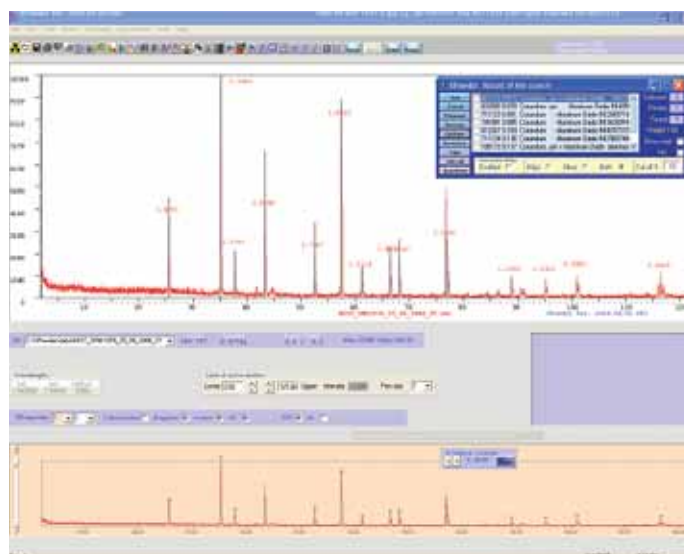
Phase analysis software includes profile fitting, search-match for phase identification using the optional ICDD PDF database and quantitative phase analysis using RIR technique.

A choice of several algorithms for pattern refinement.

Extensive graphical support.

Elaborate online help facility.

Data acquisition and analytical software based on popular Windows XP.



Search-Match results for NIST SRM 1976 using X'Pert software

Technical Specifications

Goniometer

Geometry	Vertical, θ - θ mode
High precision	Optical encoder for angular accuracy
Measuring range	3° - 122° two Theta

X-Ray Tube

Anode current (max)	1.0mA
Anode voltage (max)	50kV
Fine focus	~100 μ m
Maximum power	50W continuous
Anode material	Cu
Cooling method	Forced air

Collimation

Polycapillary collimating optics

Detector

Type	P-10 (90% Argon + 10% Methane) gas flushed Linear PSD
Gas consumption	0.17 - 0.45l/h
Working pressure	7.0 to 8.0bar
Position resolution	<80 μ m
Efficiency for Cu Ka	50% at 8bar P-10 gas
Maximum count rate	70,000cps (overall and local)
Resolution of multi channel analyser	4096 (max.)

Sample Stage

Sample positioning	Automatic alignment laser beam assisted
Sample height	Adjustable
Maximum sample dimensions	180 x 200 x 200mm (H x W x D)
Sample spinner	For coarse & in-homogenous powder and oriented/ textured samples

Safety

Comply with	CE, IEC, EN and Vollschutz standards
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General

Overall dimensions	830 x 710 x 780mm (H x W x D)
Weight	85kg (approx.)
Input supply	100 to 275V AC, 47 to 63Hz single phase
Power consumption	<100W
PC interface	USB 2.0

Company Profile

Unisantis Europe GmbH is a global leader in development and manufacture of innovative X-Ray analytical instrumentation, complete solutions and software for structural and elemental analysis. Unisantis products utilize patented optics, well known for excellent beam collimation and focussing. Success in research has enabled Unisantis to develop new cutting edge X-Ray technology, applications and products for the market. Our products have particular applications in material characterization, life sciences and industrial analysis.

Their instruments incorporate a new range of user benefits, including transportability and multifunctionality all comprised in compact, bench top, user-friendly, environmentally safe and low energy consumption equipment.



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