FISCHERSCOPE®
X-RAY SERIES

X-ray fluorescence for coating thickness measurement and material analysis

> Fischer impresses with their high-precision measuring instruments, application consulting and comprehensive service. For us, they are a permanent partner for measuring coating thickness.
>
> *Beate Brand, Head of Quality Lab at KNEISSLER Brüniertechnik GmbH, DE*

Global Application - Global Sales - Global Service
Fischer
Since 1953

Trusting number 1.
The world's best in measuring technology and service performance.

Your success is in your hands – and we make a measurable contribution to it. High-precision and efficient quality control is required, especially when coating systems are becoming increasingly complex, structures are shrinking and the demands placed on materials are growing. Whether for coating thickness measurement or material analysis, the Helmut Fischer Group is your partner for repeatable and absolutely reliable measurement technology in the field of X-ray fluorescence analysis. With our FISCHERSCOPE® X-RAY systems, we offer you first-class measurement solutions that make your work on site measurably easier and actively support you in improving the quality of your products.

According to our motto "Measuring Made Easy" a measuring challenge is easy to use if you, as a customer, use the right measurement technology. As part of our all-round, worry-free package we are there for you from the first joint consultation meeting to your first self-measurement – and well beyond. In order to offer you the highest quality, the majority of our devices – from single parts to software – are developed and produced in Germany.

Focus on what really matters – your work. We take care of the rest.

CONTENT

FISCHER TRUSTED BRANDS

FISCHERSCOPE®
GOLDSCOPE SD®
WinFTM®
XAN®
XDAL®
XDL®
XDLM®
XDV®
XULM®

Company headquarters in Sindelfingen, Germany

Helmut Fischer – Measuring Made Easy

The knowledge and willpower of our founder, Helmut Fischer – his inventive genius and irrepressible desire to implement – are the driving force behind an exemplary company development. In 1953, this success story began with the founding of a two-man company in Stuttgart, Germany. Today, the Helmut Fischer Group is a global player at the forefront of industrial measurement technology.

Innovation and expertise
When it comes to surface measurements, we are state-of-the-art worldwide. Our vow is to continuously develop and produce technology-leading products that make our customers measurably more efficient. Our high-tech devices measure coating thicknesses down to the nanometer range and are used wherever precision, reliability and ease of use are required.

Customized product solutions
Our portfolio is diverse, with each solution perfectly matched to your requirements and wishes. Your big advantage: Fischer offers everything you need from one single source, whether simple handheld devices for quick measurements on the go, to XRF analysis, or fully integrated high-end systems for automated production monitoring.

Excellent customer service
With 21 subsidiaries worldwide and a large network of authorized distributors, we are there for our customers in almost every country. From the first joint consultation to your first self-measurement, our experts from sales, application laboratory, and service will ensure individual, fast, and uncomplicated onsite support.

Quality and safety
If you assure quality in your products, you should work with quality measuring devices. For many decades, the Helmut Fischer Group has stood for outstanding products at the highest level. Absolutely reliable measured values – this is our commitment to our customers. That is why we develop our measuring devices in-house and produce most of them at our company headquarter in Germany. In addition, we are certified according to ISO 9001.

Environment and sustainability
We stand for responsible and resource-saving actions while developing sustainable measurement solutions. With optimized processes and technologies, we reduce environmental impact to a minimum. Whether recycling or upcycling, corresponding material and energy savings benefit not only the environment but also of our customers.

How it all began ...

The ambitious start
The Helmut Fischer Group proudly looks back on a long and successful company history that began in 1953. At the age of only 22, Helmut Fischer founded the company "Schuhmann and Fischer" in a small workshop in Stuttgart, Germany, together with his mentor and former physics teacher Schuhmann.

The expansion
A few years later, Helmut Fischer founded the company of the same name with headquarters in Sindelfingen. Bolstered by the German economic miracle of the 1950s and 1960s, the Swabian one-man business became an international company.

The innovations
At the beginning of the 1980s, Fischer greatly expanded its product range. In 1982, the first X-ray fluorescence measuring device was launched. Further measuring and testing devices in the fields of nanoindentation and scratch testing as well as automated measuring solutions followed. Thanks to numerous patented innovations, which still exist today, these devices quickly established themselves in the industrial environment. Terahertz measurement technology joined our product portfolio in 2023.

The technical progress
By continuously developing the components we use, we are still able to produce market-leading measuring instruments in order to support and promote the technical progress of our customers. Our extensive range of accessories also ensures a high degree of customization.

The life's work
Building measurement devices that will last for many years has always been very important to Helmut Fischer. The company itself, then, should be just as durable. Our declared goal is to develop measurement solutions that offer our customers added value and support them efficiently in the performance of their work. This focus shapes our work day after day.

The foundation
After five decades at its helm, in 2003, Helmut Fischer transferred his company shares to the Helmut Fischer Foundation. The Foundation was established to support artists and young scientists, and helps to ensure the continuity of the company.

TRUST THE NUMBER 1 IN MEASUREMENT TECHNOLOGY

The Fischer Advantage

CALIBRATION EX WORKS

BUILT TO LAST. ROBUST CONSTRUCTION FOR PARTICULARLY HIGH DEMANDS

Market-leading software. The world's most powerful application software for coating thickness measurement and material analysis

X-ray optics made by Fischer. As one of only two manufacturers of polycapillary optics worldwide, we enable X-rays to be focused on a very small measuring spot

BROADLY POSITIONED. THE RIGHT DEVICE SOLUTION FOR EVERY REQUIREMENT

OPTIMUM MEASURING DIRECTION. MEASUREMENTS POSSIBLE FROM ABOVE, BELOW OR FLEXIBLY

ELEMENT ANALYSIS OF UP TO 24 ELEMENTS SIMULTANEOUSLY

Powerful Detectors. Choice of three different detector types for the optimal solution of your measurement task. proportional counter tube, silicon PIN diode and silicon drift detector

SERVED TO SUIT. THREE TABLE CONFIGURATIONS AVAILABLE FOR YOUR NEEDS

Comprehensive service. From personal advice and preventive maintenance, including repair and spare parts management, to training on site

Particularly safe. Full-protection instruments in accordance with current radiation protection legislation

MADE IN GERMANY. HIGHEST QUALITY STANDARDS IN FISCHER PRODUCTION GUARANTEED

User-friendly. Proven and intuitive operating concept for easy handling of the device

Long-lasting X-ray tubes. Selection of different X-ray tubes for optimal measurements of your application

Many applications, a solution for everyone

Printed circuit boards: Our XRF systems comply with the IPC-4552-A/B and IPC-4556 standards. The measurement results are accurate and reproducible for the specified thickness range. HASL, electroless nickel and other critical coating systems can be measured quickly and accurately.
Applications: ENIG, ENEPIG, phosphorus content determination, solder alloys

Electronic components: Reliably control electronic components, such as compositions and layer thicknesses of lead-free solders during reflow soldering and analyses on SMD components.
Applications: Solder pads: Gold, silver, tin/tin alloy layers, under-nickel plating, palladium or palladium alloy layers

Lead frames: Determine the layer thickness and composition of complex multilayer coating systems on lead frames with repeatability and non-destructive accuracy.
Applications: Thinnest gold, silver and palladium coatings, solder alloys

Large components: Our instruments offer you the possibility to measure large samples quickly and reliably.
Applications: Material analysis, zinc (nickel) on iron, chrome coating systems, electroless nickel on aluminum

Tools: Hard coatings only function efficiently as wear protection if the coating thickness, composition and surface hardness are correct. Testing instruments from Fischer use various methods, such as X-ray fluorescence, to precisely determine the coating thickness of TiN coatings and other hard metals or carbide coatings.
Applications: Hard chrome, titanium nitride, titanium carbonitride, Titanium aluminum nitride, chromium nitride, zirconium nitride

Connector contacts: Functional surfaces on connector contacts from a size of approx. 20 µm can be measured precisely and non-destructively. These could be, for example, contact points, crimping surfaces or press-fit zones.
Applications: (Hard) gold, silver, tin (alloy) layers, under-nickel plating, base material analysis

Metal finishing: Measure the coating thickness and composition of the corrosion protection layer non-destructively and reliable. Our instruments also determine the metal concentration in your electroplating bath easily and with high precision.
Applications: Zinc, copper, ZnNi, nickel, chromium, gold, palladium, rhodium, decorative surfaces

Semiconductor / Wafer: Clean room suitable, fast and precise XRF measuring instruments for layer thickness measurement and structural analysis of modern 2.5D-/3D-packaging solutions. The instruments are available as benchtop or fully automated.
Applications: Solder bumps, thin film metallizations, smallest structures

Jewelry: Whether in the watch industry, in the gold trade or in the jewelry sector – wherever precious metals are used, Fischer instruments have proven their worth thanks to non-destructive and highly precise measurements.
Applications: Silver, gold, palladium, platinum, nickel, titanium

Sanitary: Clear results in a short time: Precise measurement of all common multilayer systems. In our product portfolio of X-ray fluorescence analysis instruments, we have just the right instrument for you.
Applications: Chromium coating system, complex geometries, zinc die casting, copper alloys

RoHS: Measuring instruments for the detection of lowest concentrations of heavy metals thanks to the sensitive silicon drift detectors. The measuring process is non-contact, non-destructive and simple. In addition, our measuring instruments offer a wide range of options for documenting the measurement results and generating reports. Our instruments measure quickly compared to chemical analysis and are excellent for screening.

Decorative chromium coatings: To ensure that trim is visually flawless not only at delivery but also after years of use, the layer structure must be monitored with regard to the thicknesses of the individual layers.
Applications: Decorative chrome coating systems on plastic substrates

ENVIRONMENT

UNIVERSAL MEASURING ENVIRONMENTS.

- Production: Can be integrated in various production environments
- Clean room: Manufacturing under conditions of the clean room class 100
- Laboratory: Research, development, medical laboratories and pharma
- Quality assurance: Incoming goods inspection and process control
- In retail: Testing at the purchase of precious metals
- On site: Mobile use with portable measuring device indoors and outdoors

CUSTOMIZED - THE OPTIMAL DEVICE SOLUTION FOR YOUR APPLICATION.

- Handy X-ray fluorescence instruments
- Small benchtop instruments for places with little space
- Large instruments modularly scalable with plenty of space for your samples, for smallest measuring spots, (partial) automation possible
- Automated systems – individually tailored to your requirements

DIMENSION

MEASURING DIRECTION

THE RIGHT MEASURING DIRECTION FOR EVERY APPLICATION.

Top down

- Image recognition with autofocus possible
- Precise positioning
- Automated measuring equipment monitoring
- Large measuring area

Bottom up

- Time saving since focusing is often not necessary
- Compact instrument dimensions
- Optional with manual table

Flexible

- Measurement on very large components possible
- Most compact instrument
- Mobile measurements possible
- Battery operation

Fixed table

- Cost-effective
- Compact

Manual XY table

- Simple and accurate positioning of the sample by hand
- Manual approach to multiple samples

Automatic XY table

- Controllable, also partially automated, via software
- Several samples can be measured in succession
- Automated image and pattern recognition via software
- Programming of measuring points, line or area scans

SERVED TO SUIT.

MEASURING TABLE

DETECTOR

THE RIGHT DETECTOR FOR EVERY APPLICATION.

Proportional counter tube

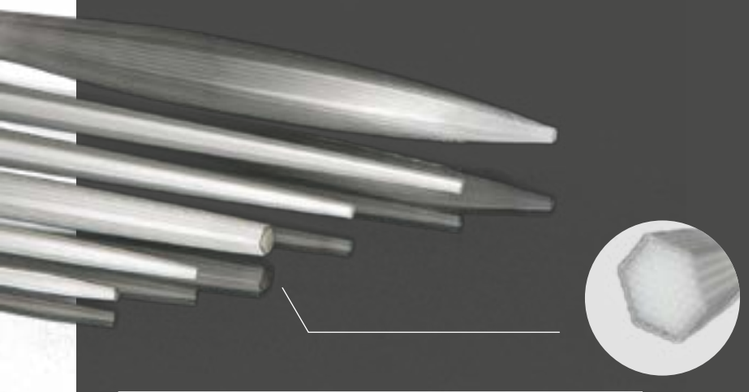
- For coating thickness measurements and simple material analysis
- Very large active detector area for high count rates
- Insensitive to the sample-orientation and the measuring distance
- Ideal for complex shapes with recesses and different measuring distances

Silicon PIN diode (PIN)

- For demanding coating thickness measurements and material analysis
- Ideal for measuring thin layers
- High energy resolution

Silicon drift detector (SDD)

- Measurement in the nanometer range and of complex multilayer tasks
- Highest energy resolution and detection sensitivity
- Phosphorus determination of NiP coatings and RoHS screening
- Best for measurement of light elements (Al, Si, P, Cl)



HIGH INTENSITIES FOR SMALLEST MEASURING SPOTS.

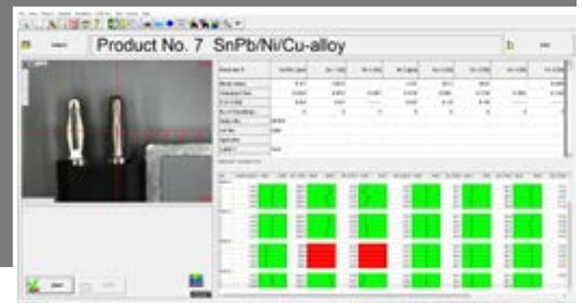
- Smallest spot sizes down to 10 µm* for measurements on smallest components and microstructures
  * Spot size: Full width at half maximum (FWHM) Mo-Kα
- The microfocus of the polycapillary optics amplifies the X-ray beam up to 10.000 times compared to collimator optics
- Instruments with polycapillary lenses are characterized by short measuring times when measuring smallest structures
- Developed and produced in-house for best quality

POLYCAPILLARY OPTICS

SOFTWARE

THE MOST COMPREHENSIVE SOFTWARE ON THE MARKET.

- Universal software for coating thickness measurement as well as material and bath analysis
- Standard-free and accurate measurement based on fundamental parameter analysis
- Fischer-patented automatic distance compensation method in the software
- Predefined measurement routines for standard tasks
- Programming of complex measurement sequences including pattern recognition
- Convenient calibration functions
- Data export to quality management systems
- Measuring equipment monitoring
- Statistical functions with statistical process control (SPC)
- Fully customizable reports and creation of individual measurement protocols
- Calculation of estimated measurement uncertainty



- Distance-dependent measured (DCM) value correction without additional calibrations
- Quick and convenient adjustment of the measuring distance, also stepless
- Measurements with the smallest possible distance and thus optimized counting rate
- Simple measurement of complex geometric shapes and in recesses
- Absolute safety: Switch-off plate and light barrier protect the detector from component collision – and thus your investment

SIMPLE AND QUICK ADJUSTMENT OF THE MEASURING DISTANCE.

DISTANCE CONTROL

PRODUCT PORTFOLIO

Measuring direction	View	Product family	Short characteristics	Detector	Primary filter	Apertures	Aperture type/size *	C-slot	Page
Measuring bottom up		**XULM®** 240	Flexible measuring instrument for coating thickness measurement, also for filigree parts such as connectors, contacts or wires	Proportional counter tube	3	4	Ø 0.1 / 0.2 mm; 0.05 × 0.05 mm; 0.2 × 0.03 mm*	✓	**18**
		**XAN®** 215 220 / 222 250 / 252	Universal instruments for fast, precise metal and gold analysis, coating thickness measurement and RoHS screening (XAN® 250)	PIN SDD SDD	- 1 6	1 1 4	Ø 1 mm* Ø 1 mm* Ø 0.2 / 0.6 / 1 / 2 mm*	–	**20**
		**GOLDSCOPE SD®** 510 / 515 520 550	Special instruments for analysis and verification of gold and other precious metals	PIN SDD SDD	- 1 6	1 1 4	Ø 1 mm* Ø 1 mm* Ø 0.2 / 0.6 / 1 / 2 mm	–	**22**
Measuring top down		**GOLDSCOPE SD® 600**	Special instrument for fast, cost-effective and non-destructive analysis of jewelry, coins and precious metals, also suitable for larger parts	SDD	3	4	Ø 0.2 / 0.6 / 1 / 2 mm*	–	**24**
		**XDL®** 230	Robust instrument for quality control of galvanized bulk parts and for bath analysis	Proportional counter tube	1	1	Ø 0.3 mm*	✓	**26**
		**XDLM®** 237 PCB 220 PCB 200 / 210	Universal instruments for the inspection of small parts and small structures, for example in the electronics industry, for measurements of light metals, hard coatings and thin electroplated coatings; special solutions for printed circuit boards possible	Proportional counter tube	3 1	4 1	Ø 0.1 / 0.2 mm 0.05 × 0.05 mm; 0.2 × 0.03 mm* Ø 0.1 mm*	✓	**26** **34 (PCB)**
		**XDAL®** 237 PCB 237 SDD	Model series for applications in the area of thin and very thin coatings; also for material analysis (e. g. RoHS screening); special solutions for printed circuit boards possible SDD version with high count rates for highest precision and shorter measuring times	PIN SDD	3 3	4 4	Ø 0.1 / 0.3 / 0.6 mm 0.5 × 0.15 mm*	✓	**28** **36 (PCB)**
		**XDAL® 600**	Easy-to-use and compact measuring instrument, specialized in the measurement of thin and very thin layers; also for material analysis (including RoHS screening)	SDD	3	4	Ø 0.1 / 0.3 / 1 / 3 mm*	–	**24**
		**XDV®-SDD**	Powerful measuring device for universal use for the inspection of very thin or complex layers up to RoHS screening at very low detection limits	SDD	6	4	Ø 0.2 / 0.6 / 1 / 3 mm*	–	**30**
		**XDV®-µ** **XDV®-µ LD** **XDV®-µ PCB** **XDV®-µ WAFER**	Model series optimized for microanalysis for measurement on smallest components and structures; also for checking complex multilayer systems; special solutions for wafers, lead frames and printed circuit boards possible	SDD	4	Polycapillary optics	Ø 20 µm Standard** Ø 20 µm halofree** Ø 10 µm halofree** Ø 60 µm halofree** Ø 50 µm halofree**	✓	**32, 36, 38**
Mobile measuring		**XAN® 500**	Flexible handheld instrument for precise coating thickness measurement and material analysis on bulky parts or in hard-to-reach places	SDD	1	1	Ø 2 mm	–	**40**
		Customized solution and automation	Modular XRF benchtop instrument scalable, tailored to your requirements FISCHERSCOPE® X-RAY 5000 series, 4000 series and FISCHERSCOPE® XAN® LIQUID ANALYZER						**42 - 49**

* Standard size, optional sizes on request, ** Full width at half maximum (FWHM) (for Mo-K_α)

Get advice from our experts! sales@helmut-fischer.com

FISCHERSCOPE® X-RAY XULM®

Quick-measure design. The sample is placed and ready for measurement in just a few steps

Good prospects. Largest measurement window on the market

Also for large samples. Hood with C-slot allows large, flat samples

Testing of multiple measuring points. Even with large-area samples, measuring points are possible on the entire sample area

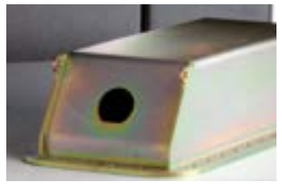
Balanced. Optimal cost-benefit ratio

Commissioning. Extremely fast and simple

Connectors

Entry-level model with a focus on speed.

The FISCHERSCOPE®X-RAY XULM® is the right solution for fast coating thickness determination in electroplating. There, a large number of samples must pass through quality control as efficiently as possible. Equipped with the microfocus tube and the proportional counter tube detector, the device allows short measuring times, even at large measuring distances and for parts with complex geometries. An intuitive control panel on the front of the unit further simplifies handling.



Corrosion protection: Zn/Fe

Fittings: Ni/Cu/Fe

With a measuring spot of 0.1 mm diameter, the robust FISCHERSCOPE® X-RAY XULM® is perfectly suited for measuring contacts, connectors, wires, PCBs and other galvanized surfaces. Another common application is in the field of corrosion protection.

Features

- Robust entry-level instrument for coating thickness measurement of galvanized parts and determination of metal content in electroplating baths
- Measuring direction with measuring bottom up
- Microfocus-tube
- 4-fold changeable apertures
- 3-fold changeable filter
- Proportional counter tube detector for short measuring times, particularly large measuring distances and complex geometries
- Up to 17 cm sample height possible
- Fully protected instrument with type approval according to current radiation protection legislation

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XULM®**.

FISCHERSCOPE® X-RAY XAN®

Quick-measure design. The sample is placed and ready for measurement in just a few steps

Versatile. For trade, industry and laboratory applications

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation* (not available with XAN® 215)

RoHS analysis. Reliable determination of hazardous substances

Commissioning. Extremely fast and simple

* Compared to the DPP.

Noble metal inspection

The system for a wide range of applications.

The focus of the FISCHERSCOPE® X-RAY XAN® family is on fast and precise material analysis of precious metals and gold alloys. In addition, these instruments are used for the determination of heavy metal trace elements and other hazardous substances within the scope of the RoHS directive. This is particularly important for electronics and other manufacturing industries.

The XAN® 215 with a powerful PIN detector is suitable for analyzing simple gold alloys that contain only a few other elements such as silver and copper. For more complex alloys, instruments with a silicon drift detector (e.g. XAN® 220) are a better choice. With their much higher resolution, they can distinguish between gold and platinum, for example in the analysis of dental alloys and melted precious metal alloys.

RoHS screening also requires higher resolutions as well as different primary filters. Ideal for this: XAN® 250 with fixed sample support or the XAN® 252 with manually operated XY stage.

Adjusting the sample

Video image displays the measuring spot exactly

Features

- Universal instrument for metal and precious metal analysis, coating thickness measurement on simple shaped samples and RoHS screening
- XAN form factor with measuring bottom up
- Microfocus tube with tungsten anode
- 4-fold changeable apertures (XAN® 250, 252)
- 6-fold changeable filter (XAN® 250, 252)
- Various semiconductor detectors ensure very good detection accuracy and high resolution: silicon PIN and silicon drift detector
- DPP+ digital pulse processor for higher count rates and significantly reduced measuring times
- Different measuring table options: fixed or manually operable
- Up to 17 cm sample height possible (XAN® 222, 252)
- Fully protected instrument with type approval according to current radiation protection legislation (XAN® 215, 220, 250)

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XAN®**.

GOLDSCOPE SD®

Your safety. Best measuring performance for your precious metal alloys

Quick-measure design. The sample is placed and ready for measurement in just a few steps

Versatile. Ideal for pawnshops, gold trading, testing laboratories and jewelry manufacturers

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

Balanced. Optimal cost-benefit ratio

Commissioning. Extremely fast and easy, measuring tasks are already pre-programmed

* Compared to the DPP.

Gold jewelry

Analysis, value determination and authenticity testing.

With the GOLDSCOPE SD® family, Fischer offers tailored solutions for the non-destructive testing of gold and precious metals. All GOLDSCOPE SD® models are equipped with the WinFTM® software, which has the most important measuring tasks for the testing of gold and precious metals.

The GOLDSCOPE SD® family offers the right solution for your testing needs: Entry-level instruments with silicon PIN detectors are intended for use in stores and pawnshops to check the composition of jewelry and dental gold. The GOLDSCOPE SD® 510 model is particularly space-saving: the laptop can be easily placed on top of the device.

For testing laboratories and jewelry manufacturers, the series offers instruments with a silicon drift detector and changeable apertures. Thus, the GOLDSCOPE SD® family also meets sophisticated demands.

Authenticity testing

Determination of value

Features

- Compact and robust benchtop instrument for fast, cost-effective and non-destructive analysis of jewelry, coins and precious metals
- Hardware and software aligned to measuring tasks related to gold and precious metals
- Especially space-saving with the GOLDSCOPE SD® 510 version
- Measuring direction with measuring bottom up
- 4-fold changeable apertures (GOLDSCOPE SD® 550)
- 6-fold changeable filter (GOLDSCOPE SD® 550)
- Various semiconductor detectors ensure very good detection accuracy and high resolution: silicon PIN and silicon drift detector
- DPP+ digital pulse processor for higher count rates and significantly reduced measuring times
- Fully protected instrument with type approval according to current radiation protection legislation

Video:
Scan the QR code and find out more about the **GOLDSCOPE SD®**.

GOLDSCOPE SD® 600
FISCHERSCOPE® XDAL® 600

Your safety. Best measuring performance for your precious metal alloys

Quick-measure design. The sample is placed and ready for measurement in just a few steps

Versatile. Ideal for pawnshops, gold trading, testing laboratories and jewelry manufacturers

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

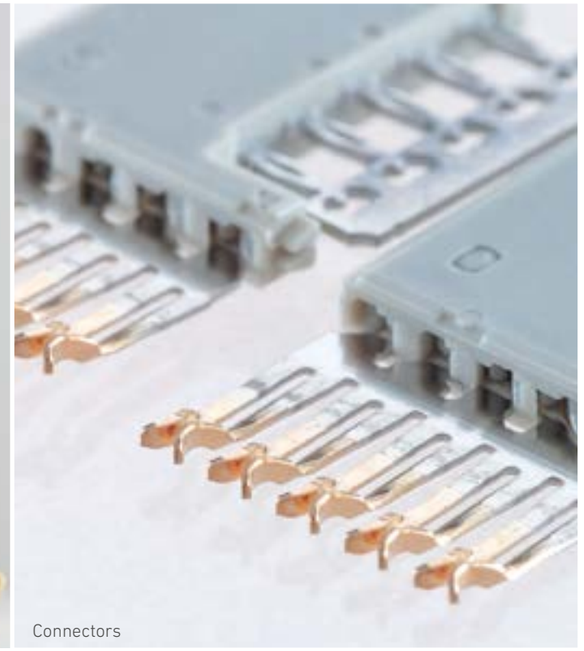
Balanced. Optimal cost-benefit ratio

Commissioning. Extremely fast and easy, measuring tasks are already pre-programmed on the XDAL® 600

Availability depending on region and country.

* Compared to the DPP.

Gold jewelry



Connectors

Analysis, value determination and authenticity testing.

GOLDSCOPE SD® 600

The GOLDSCOPE SD® 600 is tailor-made for non-destructive gold and jewelry testing as well as precious metal analysis. Predefined measurement tasks (gold setup) simplify the application for you. The silicon drift detector ensures high-resolution analyses of alloys and layers such as gold on sterling silver or rhodium on gold alloys.

Features

- Robust benchtop instrument for analysis of jewelry, coins and precious metals
- Measuring direction with measuring top down
- Microfocus tube with tungsten anode
- 4-fold changeable apertures
- 3-fold changeable filter
- Silicon drift detector 20 mm^2 for highest precision on thin layers as well as peltier cooling
- DPP+ digital pulse processor for higher count rates and significantly reduced measurement times
- Manually adjustable sample stage for fast and easy sample positioning

FISCHERSCOPE® X-RAY XDAL® 600

The FISCHERSCOPE® X-RAY XDAL® 600 is designed for non-destructive measurement of very thin layers and material analysis. This instrument is characterized by its compact design, simple handling and operation with a silicon drift detector that allows for the highest performance.

Features

- Universal instrument for measurement on smallest structures, very thin multilayers, functional layers and very thin coatings ≤ 0.1 µm
- Measuring direction with measuring top down
- Microfocus tube with tungsten anode
- 4-fold changeable apertures
- 3-fold changeable filter
- Silicon drift detector 20 mm^2 for highest precision on thin layers as well as peltier cooling
- DPP+ digital pulse processor for higher count rates and significantly reduced measurement times
- Manually adjustable sample stage for fast and easy sample positioning

FISCHERSCOPE® X-RAY XDL®
FISCHERSCOPE® X-RAY XDLM®

Quick-measure design. The sample is placed and ready for measurement in just a few steps

Also for large samples. Hood with C-slot

Built to last. Robust design for measurement on mass-produced parts

Tailor-made. Different models offer the optimal solution for your application

Testing of multiple measuring points. Even with large samples, measuring points are possible on the entire sample surface

Commissioning. Extremely fast and simple

Galvanic coatings

Your ticket into automated measurement.

The FISCHERSCOPE® X-RAY XDL® and XDLM® instruments are closely related to the FISCHERSCOPE® X-RAY XULM®. While the detectors, X-ray tubes, apertures and filter combinations are identical with the XULM®, the XDL® and XDLM® devices measure top down.

Ideally suited for the inspection of galvanized mass-produced parts and bath analysis, the XDL® and XDLM® devices offer various measuring table options.
The latter can be used for automated series testing.

Corrosion protection: Zn/Fe

Connectors: Au/Ni/CuSn6

While the XDL® device has a standard X-ray tube, its sister model XDLM® is equipped with a microfocus tube and changeable apertures and primary filters. It is the best choice for inspecting many small parts in succession. That is why the device is also used in the electronics industry. With a variable measuring distance of 0 mm to 8 mm, it enables reliable measurement of non-planar parts, such as plug contacts.

Features

- Universal instrument for measurements on galvanic mass-produced parts
- Stepless measuring distance with measuring top down
- Standard X-ray tube (XDL®); microfocus tube (XDLM®)
- 4-fold changeable apertures (XDLM®)
- 3-fold changeable filter (XDLM®)
- Proportional counter tube detector for short measuring times and small measuring spot
- Various measuring table options; models with extended sample support
- Fully protected instrument with type approval according to current radiation protection legislation

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XDL®**.

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XDLM®**.

FISCHERSCOPE® X-RAY XDAL®

One device, many possibilities. Coating thickness measurement, material analysis and trace analysis

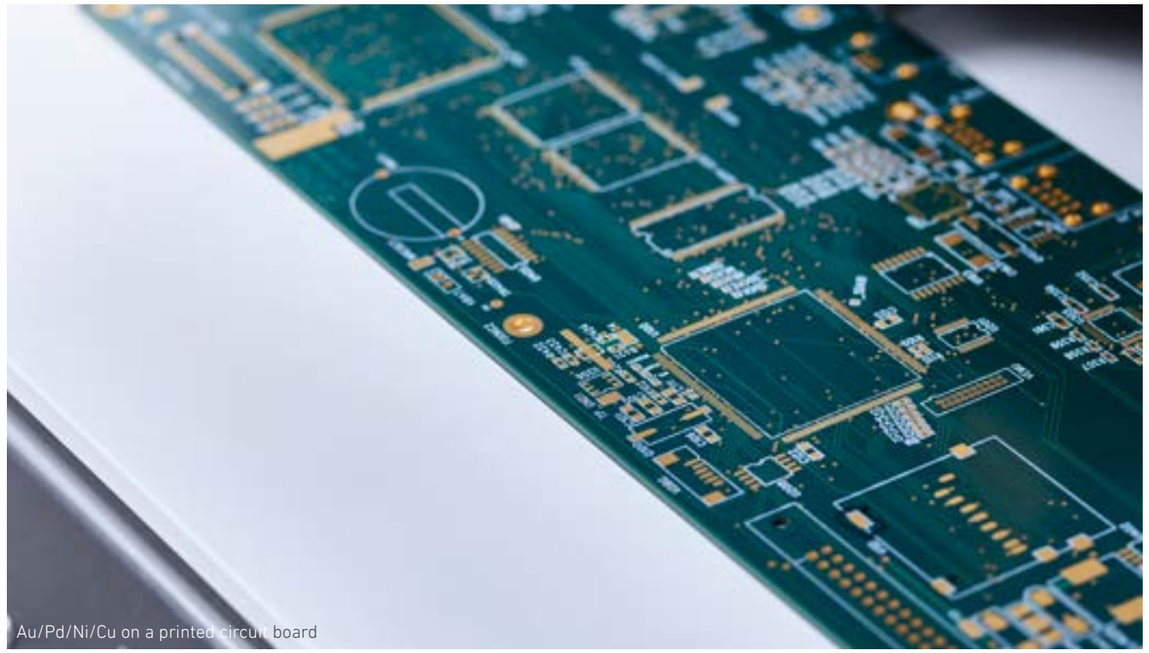
Fully automatable. Let your instrument work for you with just one click

Compact design. Very good compromise between performance and space requirements

Testing of multiple measuring points. Even with large samples, measuring points are possible on the entire sample surface

Also for large samples. Hood with C-slot

Commissioning. Extremely fast and simple



Au/Pd/Ni/Cu on a printed circuit board

The best detectors for thin layers.

With its semiconductor detectors and the programmable measuring table, the FISCHERSCOPE® X-RAY XDAL® series is an excellent choice for fast and accurate measurements of solder composition. This makes it possible to eliminate the risk of getting different solder batches via a simple scan at incoming goods inspection.

The XDAL® series is also well suited for applications that require testing thin and ultra-thin coatings < 0.05 µm. This allows, for example, expensive materials to be saved and process-reliable production to be carried out. Mass inspection of different components in production control and incoming goods can also be completed.

The instrument version with a 50 mm^2 silicon drift detector is suitable for RoHS measurements.

HSS drill bit: TiN/Fe

High reliability: Pb (> 3 %) in electronic components

Features

- Universal instrument for automated measurements of thin and very thin layers < 0.05 µm and for material analysis in the ppm range
- Stepless measuring distance with measuring top down
- Microfocus tube with tungsten anode
- 4-fold changeable apertures
- 3-fold changeable filter
- Various semiconductor detectors ensure very good detection accuracy and high resolution: silicon PIN and silicon drift detector
- Optionally also available with fixed or manual measuring table
- Fully protected instrument with type approval according to current radiation protection legislation

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XDAL®**.

FISCHERSCOPE® X-RAY XDV®-SDD

Built to last. Robust design for particularly high requirements

Fully automatable. Let your instrument work for you with just one click

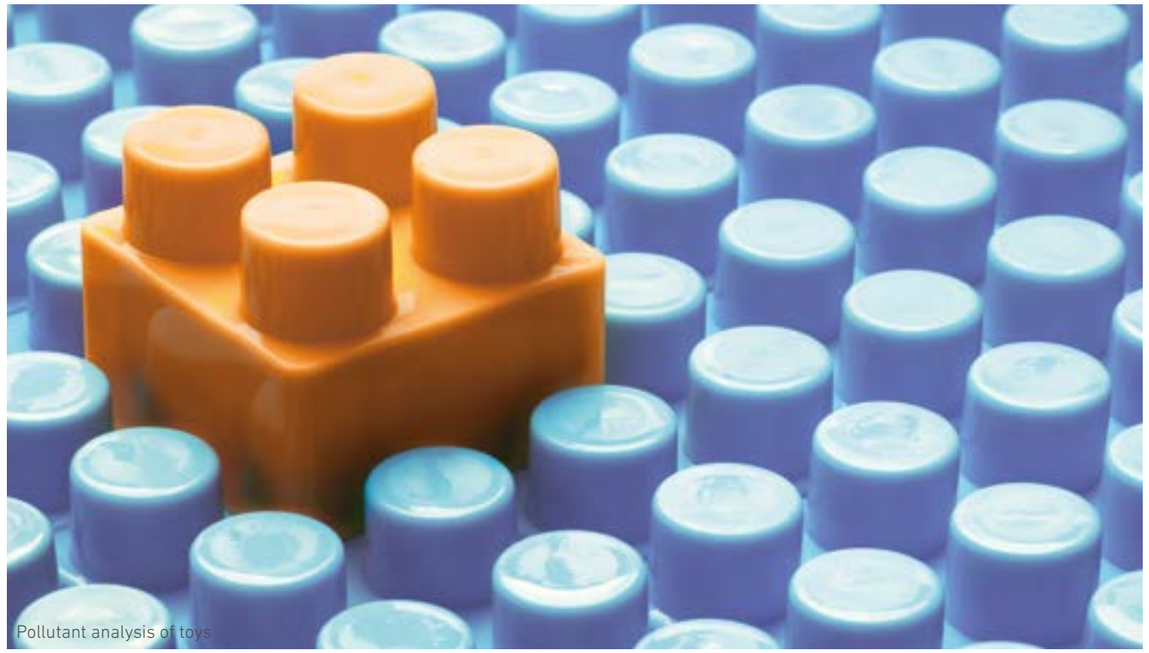
Quick-measure design. With a few simple steps the sample is placed and ready for measurement. Automated measurements of many parts are possible

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

RoHS analysis. Determination of pollutants with high detection accuracy and outstanding performance

Fast. Thanks to short measuring times, you save valuable time

* Compared to the DPP.



Pollutant analysis of toys

The high-end all-rounder.

FISCHERSCOPE® X-RAY XDV®-SDD models are among the most powerful X-ray instruments. Their silicon drift detector is extremely sensitive to fluorescence radiation of light elements. This permits very low detection limits as well as measurement applications relating to NiP, RoHS and very thin layers < 0.05 µm. This is why the universal XDV®-SDD instrument performs exceedingly well in research and development, laboratory and process qualification settings. Also, its ease of use makes it indispensable in production control.

NiP/Fe: P concentration and layer thickness

Passivation layers: Cr/Zn/Fe

The XDV®-SDD system is especially well suited for precise trace analysis and rapid monitoring of pollutant limit values. For example, in plastics it can be used to determine critical chemical elements such as lead, mercury and cadmium with detection limits of just a few ppm.

Features

- Universal instrument for the determination of pollutants in the smallest concentrations according to RoHS and for automated measurements of layers, including < 0.05 µm
- Stepless measuring distance with measuring top down
- Microfocus tube with tungsten anode, other anodes as options available
- 4-fold changeable apertures
- 6-fold changeable filter
- Silicon drift detector 50 mm^2 for highest precision on thin layers
- Aperture (collimator) up to 3 mm: Highest intensity for shortest measuring time even with difficult samples (thinnest coatings, Si wafers, conversion layers), light elements (fuel cells, Al components)
- Programmable measuring stage for automated measurements on small structures
- Fully protected instrument with type approval according to current radiation protection legislation

Video and landing page:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XDV®** series.

FISCHERSCOPE® X-RAY XDV®-µ
FISCHERSCOPE® X-RAY XDV®-µ LD

BRAND NEW MICROFOCUS TUBE ULTRA

Meeting all challenges. Reliable and fast results for ambitious measurement

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

Most advanced polycapillary optics on the market. Our in-house manufactured polycapillary optics deliver outstanding measurement results with short measuring times

Fully automatable. Let your instrument work for you with just one click

Accurate and precise. Positioning of the measuring point on small structures thanks to automatic image recognition

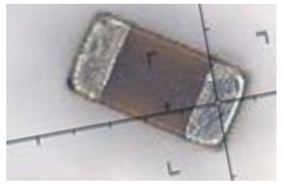
* Compared to the DPP.

Connectors (XDV®-µ LD)

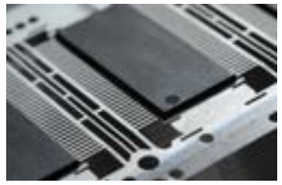
Smallest measuring surface, highest precision.

The FISCHERSCOPE® X-RAY XDV®-µ instruments form Fischer's high-end X-ray fluorescence series, designed for precise coating thickness measurement and material analysis on tiny structures. The instruments are equipped with powerful silicon drift detectors and polycapillary optics, which drastically reduce measuring times and enable repeatable measurements due to the high radiation intensity.

The XDV®-µ instruments are used in particular for applications in the electronics and semiconductor industry such as the measurement of very small structures, e.g. bond surfaces, SMD components or thin wires.



SMD components



Lead frames

The roomy, easily accessible measuring chamber with side cut-outs (C-slot) and expanded sample support facilitates working with large samples.

The XDV®-µ LD model offers more space for complex shaped test parts with outstanding measurement performance. The Long Distance capillary allows smallest measuring spots and exact measurements on assembled PCBs, connectors or pins at a unique measuring distance of 12 mm.

Features

- Universal instruments for measurements on smallest components and structures as well as complex multilayer systems
- Stepless measuring distance with measuring top down
- Microfocus tube Ultra with tungsten anode for even higher performance on smallest spots with µ-XRF; molybdenumanode optional
- 4-fold changeable filter
- Polycapillary optics allow particularly small measuring spots of 10 or 20 µm half-width with short measuring times and high intensity
- Silicon drift detector 20 or 50 mm^2 for highest precision on thin layers
- Video system with 3x optical zoom for precise sample positioning
- Precise programmable measuring table for automated measurements on small structures

Video and landing page:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XDV®** series.

FISCHERSCOPE® X-RAY XDLM®-PCB

PCB experts. Specialized measuring solutions for printed circuit boards

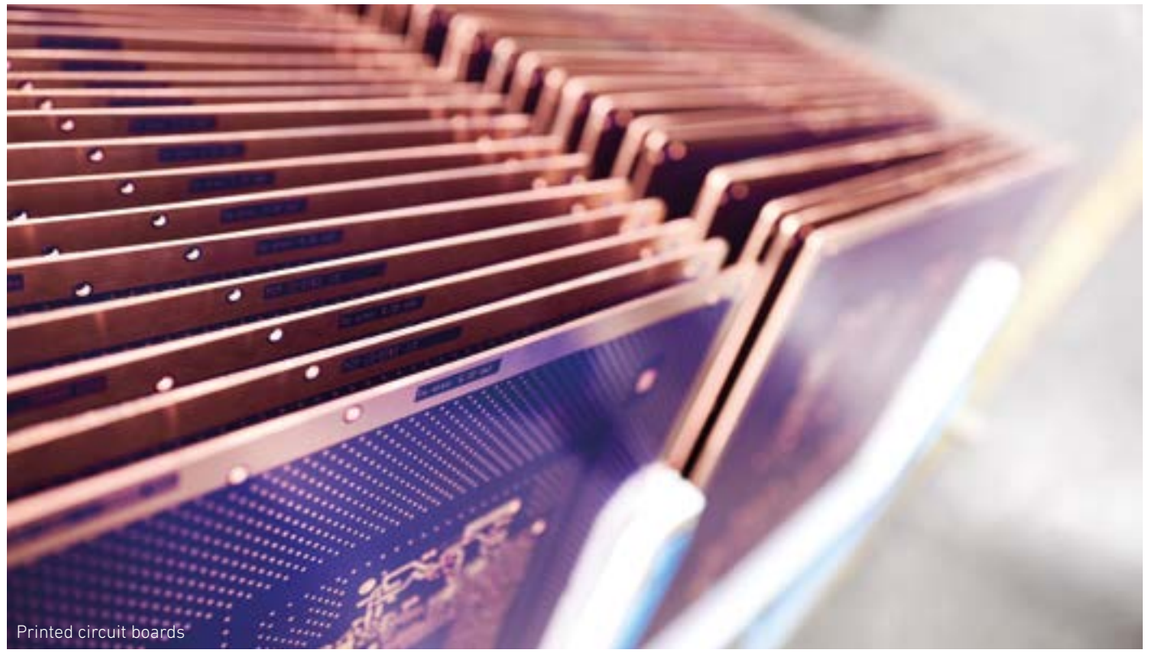
Accurate and precise. Positioning of the measuring point on small structures thanks to automatic image recognition

Quick-measure design. The sample is placed and ready for measurement in just a few simple steps

Tailor-made. Different models offer the optimal solution for your application

Balanced. Optimal cost-benefit ratio

Commissioning. Extremely fast and simple



Printed circuit boards

The entry-level series for printed circuit boards.

FISCHERSCOPE® X-RAY XDLM®-PCB

The FISCHERSCOPE® X-RAY XDLM® PCB with microfocus tube and proportional counter tube detector is ideal for... Equipped with various apertures and filters, as well as different measuring table options, the device always offers the optimal conditions for your measuring task.

PCB

Optional measuring table extension

Our WinFTM® software offers numerous programming tools and specific features especially for PCB applications, such as advanced image and pattern recognition technology. This allows you to fully automate your measurements and to ensure the quality of your products. Speziell für Leiterplattenanwendungen bietet unsere Software WinFTM® dabei zahlreiche Programmiertools und spezifische Features, wie z.B. die automatische Bild- und Mustererkennungstechnologie. Damit können Sie Ihre Messungen vollständig automatisieren und die Qualität Ihrer Produkte sicherstellen.

Features

- Universal entry-level instrument for simple measurements of components and small structures on printed circuit boards
- Measuring direction with measuring top down
- Microfocus tube with tungsten anode
- Fixed or 4-fold changeable apertures
- Fixed or 3-fold changeable filter
- Proportional counter tube detector for short measuring times and small measuring spot
- Various measuring table options: manual pull-out, optional with measuring table extension or programmable, for PCBs up to 610 × 610 mm

FISCHERSCOPE® X-RAY XDAL®-PCB
FISCHERSCOPE® X-RAY XDV ®-µ PCB

Meeting all challenges. Reliable and fast results for ambitious measuring tasks

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation** (XDV®-µ PCB)

PCB experts. Specialized measuring solutions for printed circuit boards, fulfill IPC standards

Most advanced polycapillary optics on the market. Our in-house manufactured polycapillary optics deliver outstanding measurement results in short measuring times (XDV®-µ PCB)

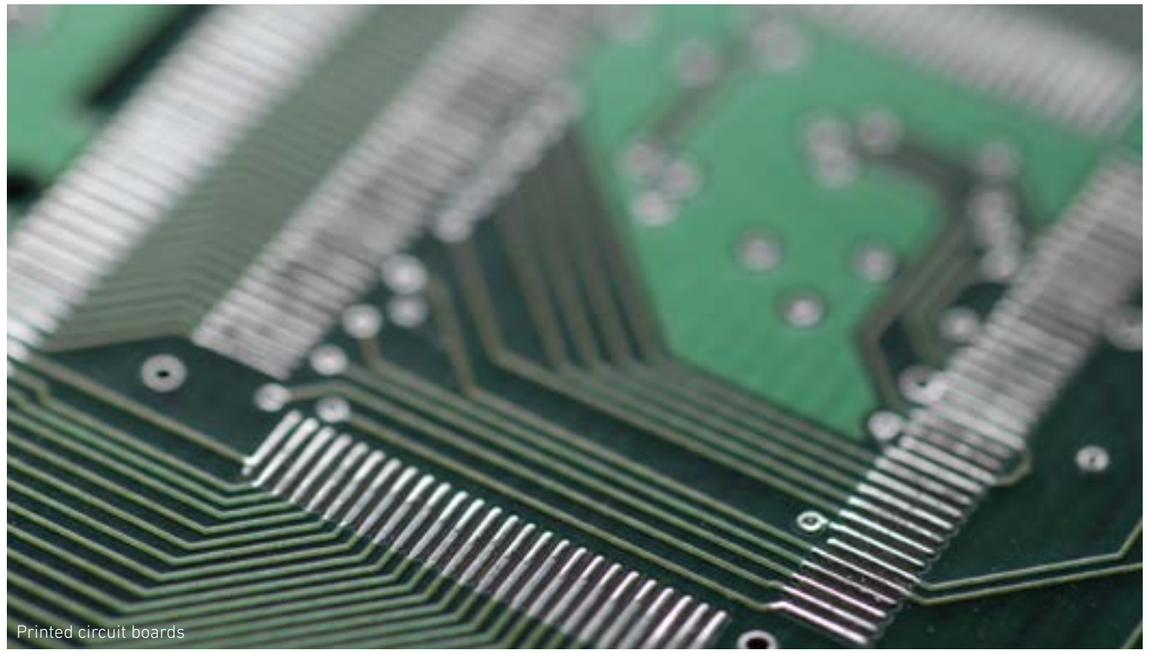
Fully automatable. Let your instrument work for you

Accurate and precise. Positioning of the measuring point on small structures thanks to automatic image recognition

Commissioning. Extremely fast and simple

BRAND NEW MICROFOCUS TUBE ULTRA*

* Only for FISCHERSCOPE® X-RAY XDV®-µ PCB.
** Compared to the DPP.



Printed circuit boards

The professional series for printed circuit boards.

FISCHERSCOPE® X-RAY XDAL®-PCB

Due to the combination of a powerful silicon drift detector, multi-collimator and changeable filters, FISCHERSCOPE® X-RAY XDAL®-PCB instruments are predestined for the measurement of small structures on printed circuit boards. The instruments allow optimal measurement conditions for various applications, e. g. ENIG and ENEPIG.

Features

- Universal instrument for measurements on small structures, multilayers, functional layers and thin coatings < 0.1 µm
- Measuring direction with measuring top down
- Microfocus tube with tungsten anode
- 4-fold changeable apertures
- 3-fold changeable filter
- Silicon drift detector 20 or 50 mm^2 for highest precision on thin layers
- Various measuring table options: manual pull-out, optional with measuring table extension or automated, for PCBs up to 610 × 610 mm

FISCHERSCOPE® X-RAY XDV®-µ PCB

The FISCHERSCOPE® X-RAY XDV®-µ PCB instruments are used for measurements on smallest structures. Thanks to silicon drift detectors and polycapillary optics, the high-end instrument measures with extremely small measuring spot at very high intensity. The instruments meet the IPC requirements for ENIG and ENEPIG.

Features

- Universal instrument for automated measurements on smallest structures and very thin coatings < 0.1 µm
- Microfocus tube Ultra with tungsten anode for even higher performance on smallest spots with µ-XRF; molybdenumanode optional
- Measuring direction with measuring top down
- 4-fold changeable filters
- Polycapillary optics permit particularly small measuring spots Ø approx. 20 or 10 µm
- Silicon drift detector 20 or 50 mm^2 for highest precision on thin layers
- Programmable measuring table for printed circuit boards up to 613 × 610 mm, optionally with vacuum function
- Up to 10 mm sample height possible

FISCHERSCOPE® X-RAY XDV®-µ WAFER

Meeting all challenges. Reliable and fast results for ambitious measuring tasks

Accurate and precise. Positioning of the measuring point on small structures thanks to automatic image recognition

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

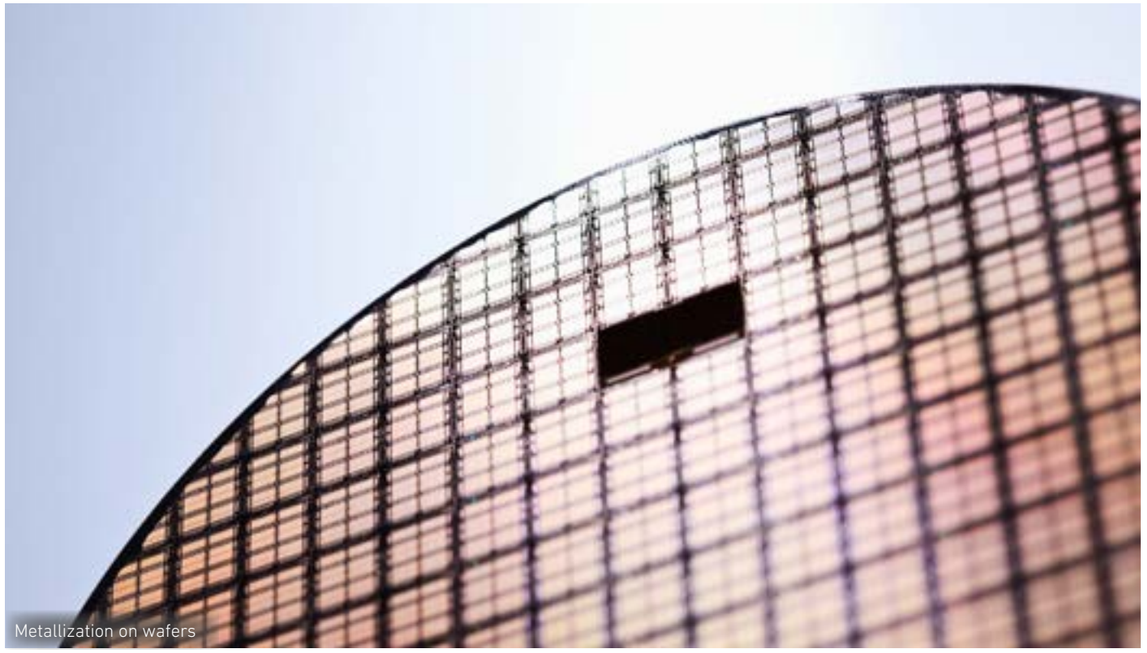
Most advanced polycapillary optics on the market. Our in-house manufactured polycapillary optics deliver outstanding measurement results at short measuring times

Fully integrated solution. XDV®-µ SEMI combined with wafer handler of your choice

Fully automatable. Let your instrument work for you with just one click

BRAND NEW MICROFOCUS TUBE ULTRA

* Compared to the DPP.



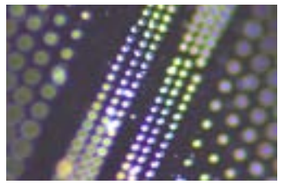
Metallization on wafers

Cutting-edge technology for wafer applications.

Wafers place some of the highest demands on the measurement technology used. On the one hand, the surfaces are very sensitive, on the other hand, the structures are so small that only special devices can analyze them..

FISCHERSCOPE® X-RAY XDV®-µ WAFER model is specialized in the analysis of microstructures and the growing requirements of the semiconductor industry. The device is available as a stand-alone version or integrated into a fully automated measurement system (FISCHERSCOPE® X-RAY XDV®-µ SEMI). Typical measuring tasks include the characterization of base metallizations, material analysis of solder bumps and coating thickness measurement on contact surfaces.

Solder bumps



Small structures

Testing of such tiny structures requires minuscule measuring spots. That is why XDV®-µ WAFER instruments are equipped with polycapillary optics. They focus the X-ray onto a measuring spot of just 10 – 20 µm. A XDV®-µ WAFER system thus allows for much more precise characterization of the individual microstructures than any conventional instruments can.

Features

- Special instrument for automated measurements of thin layers and multilayer systems on wafers with diameters from 6 - 12 inches
- Stepless measuring distance with measuring top down
- Microfocus tube Ultra with tungsten anode for even higher performance on smallest spots with µ-XRF; molybdenumanode optional
- 4-fold changeable filter
- Polycapillary optics allow particularly small measuring spots of 10 or 20 µm half-width with short measuring times and high intensity
- Silicon drift detector 20 mm^2 or 50 mm^2 for highest precision on thin layers
- Vacuum stage with holders for all standard wafer formats from 150 - 300 mm
- Up to 5 mm sample height possible
- Extensive automation options with WinFTM®

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XDV®-µ SEMI.**

FISCHERSCOPE® X-RAY XAN® 500

Two in one. Mobile, universal instrument for coating thickness measurement and material analysis in laboratory quality

Precise and exact. Three-point support and geometry enable secure contact with the sample

Mobile use. Can be used flexibly indoors and outdoors

Full flexibility. Variable measuring direction for measuring bulky objects or even small parts

Long operating time. Battery charge lasts up to six hours of operation


Corrosion protection in aircraft construction

The specialist for field duty.

Despite its small size, the FISCHERSCOPE® X-RAY XAN® 500 is in no way second to laboratory equipment. The modern silicon drift detector is capable of accurate and precise measurement results with short measuring times. Even complex measuring tasks involving multiple layers are performed reliably – and quickly. How? The compact device detects thickness and composition of the layer in a single measuring step.


Measuring box


Measuring cell

Thanks to its three-point support, the XAN® 500 can be positioned securely on the surface, so layer thicknesses can be determined with repeatable accuracy. The results are shown directly on the display. For data evaluation, the handheld unit is equipped with the full version of WinFTM® software that is offered with all of Fischer's other X-ray systems. As calibration samples may not be readily available, the WinFTM®'s fundamental parameter analysis offers standard free measurement capabilities to measure without prior calibration.

Features

- Mobile and universal handheld instrument for precise coating thickness measurement and material analysis – even with difficult material combinations
- Weight 1.9 kg
- Up to six hours operating time with one battery charge
- Portable measurement box transforms the system into a XRF benchtop instrument
- Air cooled mini X-ray tube
- Fixed aperture
- Measuring spot Ø 3 mm
- Silicon drift detector for highest precision on thin layers
- Data evaluation via Bluetooth connection with full WinFTM® software
- Capable of bath analysis; liquid measuring cell is available option
- For outdoor use with IP54 protection rating

Video:
Scan the QR code and find out more about the **FISCHERSCOPE® X-RAY XAN® 500**.

FISCHERSCOPE® X-RAY MODULAR CHAMBER

Think big. Large chamber for large samples

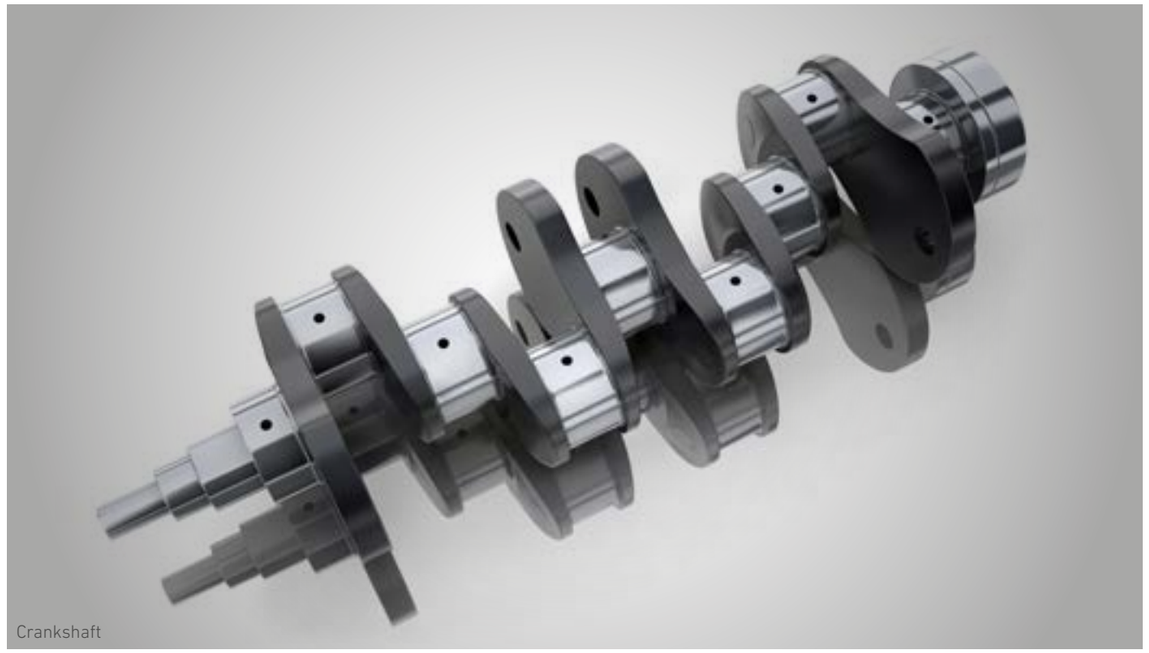
Tailor-made. Different models offer the optimal solution for your application and requirements; flexible and modularly scalable

Reliable. Precise measurement through measuring points on the entire sample surface

Configurable. Size and design according to your requirements

Proven software. Fischer WinFTM® software guarantees you most comprehensive functionalities and measurement applications

Two in one. Robust enclosure and proven Fischer measurement technology



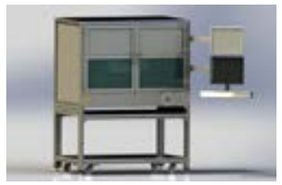
Crankshaft

Measurements on large-volume samples.

The Modular Chamber enables precise measurements and analysis on large-volume workpieces that exceed the sample sizes of Fischer's standard X-ray instruments. The Modular Chamber combines a large housing with Fischer's proven XRF measurement technology. You get the measurement technology of your choice mounted in a chamber customized for your needs. FISCHERSCOPE® instruments of the XDL®, XDLM® and XDAL® series can be integrated.

The Modular Chamber offers maximum flexibility. Matching your sample, the support is available as a standard table or adapted support plate. The large, easily accessible measuring chamber allows convenient hand-ling of samples and can be configured in any size. The functional overall system comes with a stable underframe as an available option.

As standard, the chamber is equipped with metal sheets on the sides and Plexiglas panes in the front.



With underframe

Ideally suited for large samples up to 30 cm

Features

- Large special enclosure for the integration of Fischer X-ray measurement technology for coating thickness measurements and material analysis on large-volume workpieces
- Integration of FISCHERSCOPE® X-RAY instruments XDL®, XDLM® and XDAL®
- Measuring direction with measuring top down
- Different X-ray tubes depending on the instrument
- Different apertures depending on the instrument
- Different filters depending on the instrument
- Various detectors ensure very good detection accuracy and high resolution: proportional counter tube, silicon PIN or silicon drift detector
- Different measuring table options: fixed or programmable
- Standard chamber size with approx. 1 m^3 and 1.5 m^3 or tailor-made

FISCHERSCOPE®
X-RAY 5000 SERIES

Tailor-made. Easy integration, individually adaptable to your application

Does not break a sweat. Sample temperatures up to 250 °C (482 °F) thanks to water cooling

Compact design. Measuring head with all necessary components in one unit

Robust and reliable. No moving parts

Vacuum compatible. Can be mounted on vacuum chambers

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

* Compared to the DPP.

Practical installation via an ISO-F DN 250 flange

Quality control of solar panels

Inline measurement with highest precision for thin layers.

The FISCHERSCOPE® X-RAY 5000 series is the perfect choice for non-destructive material analysis and thickness measurement of particularly thin coatings on large-area products. As a compact, modular measuring unit, the measurement technology can be easily and flexibly integrated into a wide variety of production systems. The FISCHERSCOPE® X-RAY 5000 can be used as a single module or grouped together, for example in the photovoltaic sector for quality testing of fuel cells, glass panels and thin-film solar cells, or for films and hot surfaces. Specially developed for automation, the measuring heads can be easily installed on vacuum chambers using an ISO-F DN 250 flange, for example.

FISCHERSCOPE® X-RAY 5100 scanner

Simultaneous measurement by several FISCHERSCOPE® X-RAY 5100

The device has proven itself to be robust and low-maintenance in continuous industrial operation. Calibration is quick and easy during the production process. Thanks to large apertures, state-of-the-art detectors and ultra-fast pulse processing, you benefit from outstanding repeatability. The measuring heads can be integrated into existing systems or supplied as a complete, customer-specific turnkey solution.

Features

- Robust inline instrument for analysis and measurement of thinnest layers and layer systems in the running process with connection to the production control system
- Microfocus tube with tungsten anode; molybdenum anode optional
- Fixed aperture (configurable up to Ø 11 mm)
- Fixed filter (configurable)
- Silicon drift detector 50 mm^2 for highest precision on thin layers as well as Peltier cooling
- DPP+ digital pulse processor for higher count rates and significantly reduced measurement times
- For measurements in vacuum or air
- Available option: Water cooling for sample temperatures up to 250 °C (482 °F)
- Any mounting position possible
- Remote control and data export via TCP/IP interface

FISCHERSCOPE® X-RAY 4000

Tailor-made. Individually adaptable to your application

Automatable. Approach measuring points precisely and change measuring task at the same time

Inline measurement in real time. Precise and fast measurement in your shift operation

Easy to operate. Strip for adjustment and operating panel easily accessible

Compact design. Positioning axis and measuring head in one unit

Intelligent self-monitoring. Automatable regular calibration and measuring equipment monitoring

Digital pulse processor DPP+. Even shorter measuring times with the same standard deviation*

* Compared to the DPP.

Electroplated stamped strip

Inline measurement with maximum endurance.

The FISCHERSCOPE® X-RAY 4000 series is developed for the continuous and non-destructive analysis and measurement of layers and layer systems in manufacturing processes. Designed for industrial requirements, the inline measuring system is used in production sites for the measurement of electroplated layers on solid and stamped strips, even with shaped and stamped contact surfaces. It is also suitable for measuring electrical contacts on strip material and platinum and other precious metals on membranes for fuel cells.

Fuel cells

FISCHERSCOPE® X-RAY 4200 (horizontal alignment)

Thanks to simple handling, automated calibration and minimum set-up times, converting from one product to another is simple due to the easily adjustable conveyor guides. The programmable axis of the measuring head allows reliable measurements at different positions of the product to be measured.

Features

- Robust inline instrument for measurement on solid strips, stamped grids or coated membranes, from a few millimeters up to one meter wide
- Microfocus tube with tungsten anode; molybdenum anode optional
- 2-fold or 4-fold changeable apertures
- 6-fold changeable filter
- Silicon drift detector 50 mm^2 for highest precision on thin layers
- DPP+ digital pulse processor for higher count rates and significantly reduced measurement times
- Hardware and software aligned to measuring tasks related to inline measurement
- Horizontal or vertical installation position
- TCP/IP interface for process control

FISCHERSCOPE®
XAN® LIQUID ANALYZER

Market-leading precision. Combination of measuring cell and software ensures best measuring performance and safety

Absolutely unique. No need to change* the measuring cell

Maximum lifetime. Innovative design and durable materials enable a lifetime of the measuring cell up to 1 year*

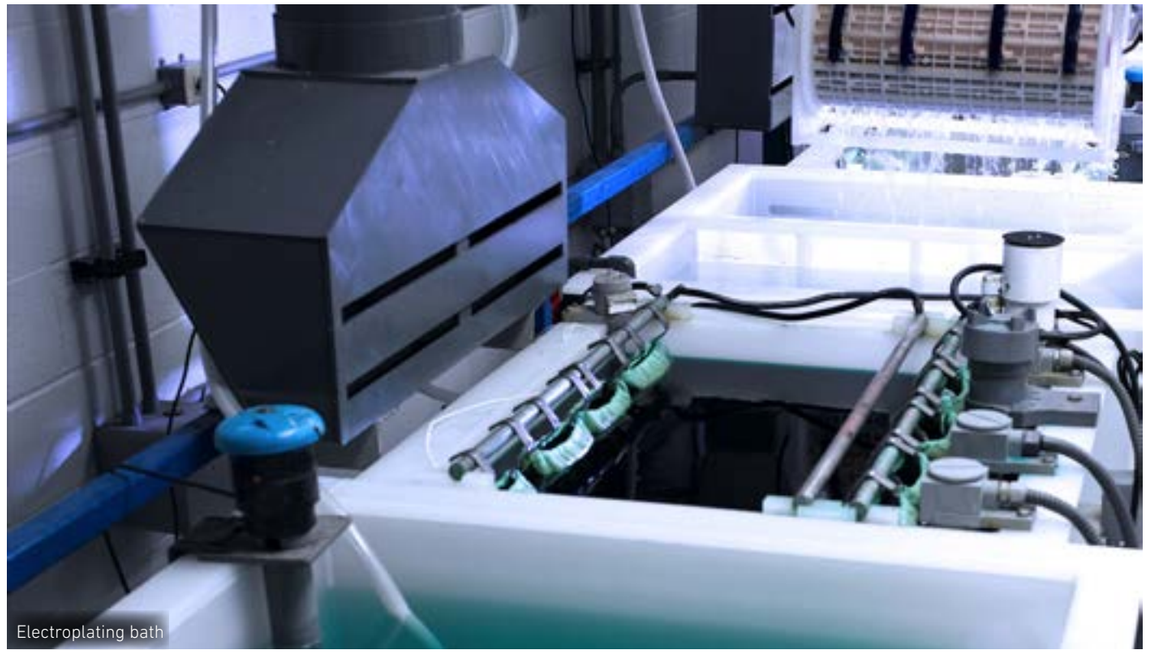
Intelligent self-monitoring. Fully automatic, preventive purging, monitoring and calibration processes ensure maximum uptime

No time-consuming spot checks and information gaps. Stay continuously in the picture about your electroplating process

Extremely low maintenance. Robust construction, service-friendly design

Safety in real time. Live measurement results as well as simple and fast documentation of these

*In a test setup under controlled laboratory conditions with a typical zinc-nickel solution, a lifetime of the measuring cell of over one year was achieved. The lifetime can vary and is individually dependent on the frequency of the rinsing and cleaning cycles, the composition of the coating baths and their temperatures, and the ambient conditions.



Electroplating bath

Efficient inline solution analysis for electroplating baths.

Now you can control your coating system even more efficiently - with the FISCHERSCOPE® XAN® LIQUID ANALYZER you can keep a constant eye on your electroplating baths. The high-precision inline measuring device allows you to measure a wide range of metallic bath solutions, such as zinc, nickel, zinc/nickel, gold, palladium, chrome and rhodium. Each electroplating bath has its own supply line to the respective measuring cell in order to avoid contamination.

Closed Loop System

Sophisticated flow cell

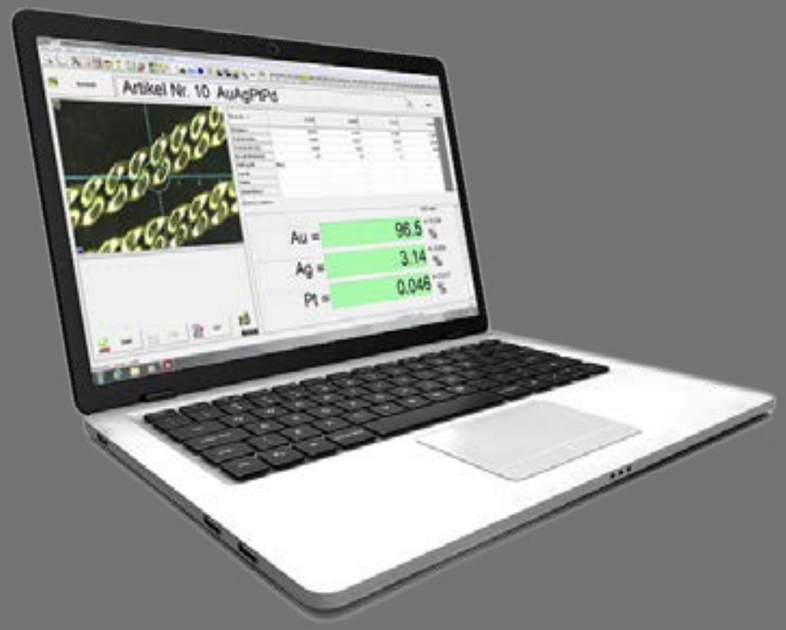
The robust multi-channel inline measuring system can be used flexibly, even in harsh industrial production environments: as a stand-alone version or fully integrated into a local production control system (MES). The device continuously delivers precise measurement results 24/7. The measurement data is provided quickly, easily and in real time via a fieldbus interface. The data can be visualized centrally on the device or decentrally on other external monitors, for example directly at the electroplating bath. The large touch display is easy and intuitive to operate. The measuring device is controlled via an integrated Siemens PLC.

Features

- Robust inline instrument for fully automated analysis of metal concentration in electroplating baths
- Automatic sequential measurement of up to 4 electroplating bath solutions (channels)
- 1-channel to 4-channel solution
- Microfocus tube with tungsten anode
- Silicon drift detector 50 mm^2 for highest precision
- Digital Pulse Processor DPP+ for minimizing measurement time and optimizing repeatability
- Fieldbus interface enables connection to higher-level control systems as well as equipment for equipment communication
- WAN connectivity

Video and landing page:
Scan the QR code and find out more about the **FISCHERSCOPE® XAN® LIQUID ANALYZER**.

WinFTM®



The mathematical heart of our FISCHERSCOPE® X-RAY devices.

Whether for quality control, incoming goods inspection or to draw up test reports for research laboratories – the requirements for reliable measurement software are as varied as the possible applications of FISCHERSCOPE® X-RAY devices. WinFTM® is the world's most comprehensive and powerful software for coating thickness measurement and material analysis with X-ray fluorescence on the market. Developed to perform precise and reliable measurements as well as for fast evaluation and professional documentation of measurement data, it is characterized by a wide range of proven features.

Standard-free and precise measurement. Coating thickness measurement and material analysis based on optimized fundamental parameter algorithms

Traceable measurement results. Simple and guided calibration workflow with Fischer calibration standards with DAkkS certificate

Automated measurement sequences. Application-specific programming for the automatic execution of recurring measurement sequences

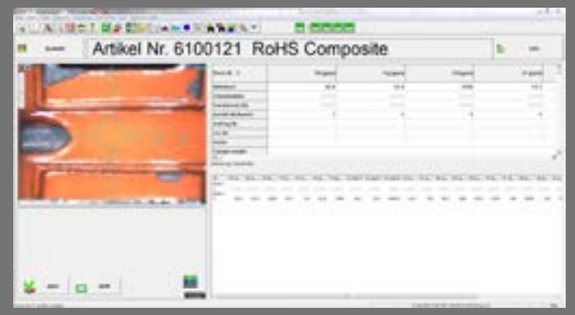
Convenient evaluation. Extensive statistical evaluations including statistical process control (SPC)

Direct data export. Simple data export via various interfaces, such as quality management systems

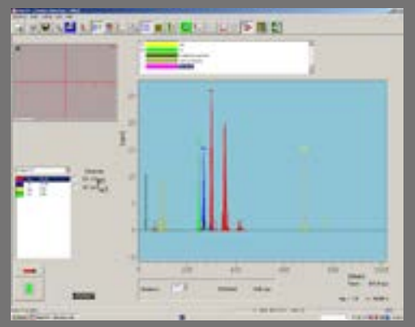
Create data reports easily. Fully customizable reports and creation of individual measurement protocols with just one click

With WinFTM® you are equipped for numerous applications. The software is not only used for coating thickness measurement and material analysis. You can also rely on precise and reliable measurement results for qualitative element analysis and solution analysis of electroplating baths.

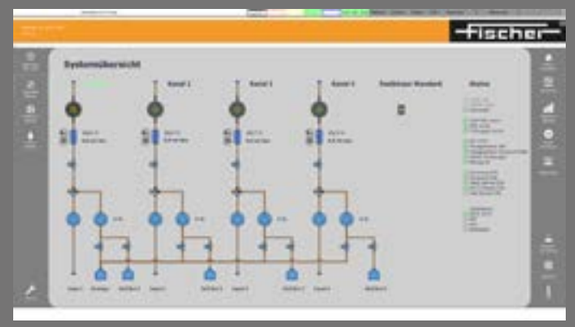
Coating thickness and material composition can be measured in parallel
Measure up to 24 variables simultaneously! A measured variable can be both a coating thickness and an element concentration. If you carry out a gold analysis, the WinFTM® will display your measurement results as a percentage or carat if required. If your FISCHERSCOPE® X-RAY device is used for RoHS screening, the software supports you with automatic material identification and a simple traffic light display – so that you can see at a glance whether your sample has passed or failed.



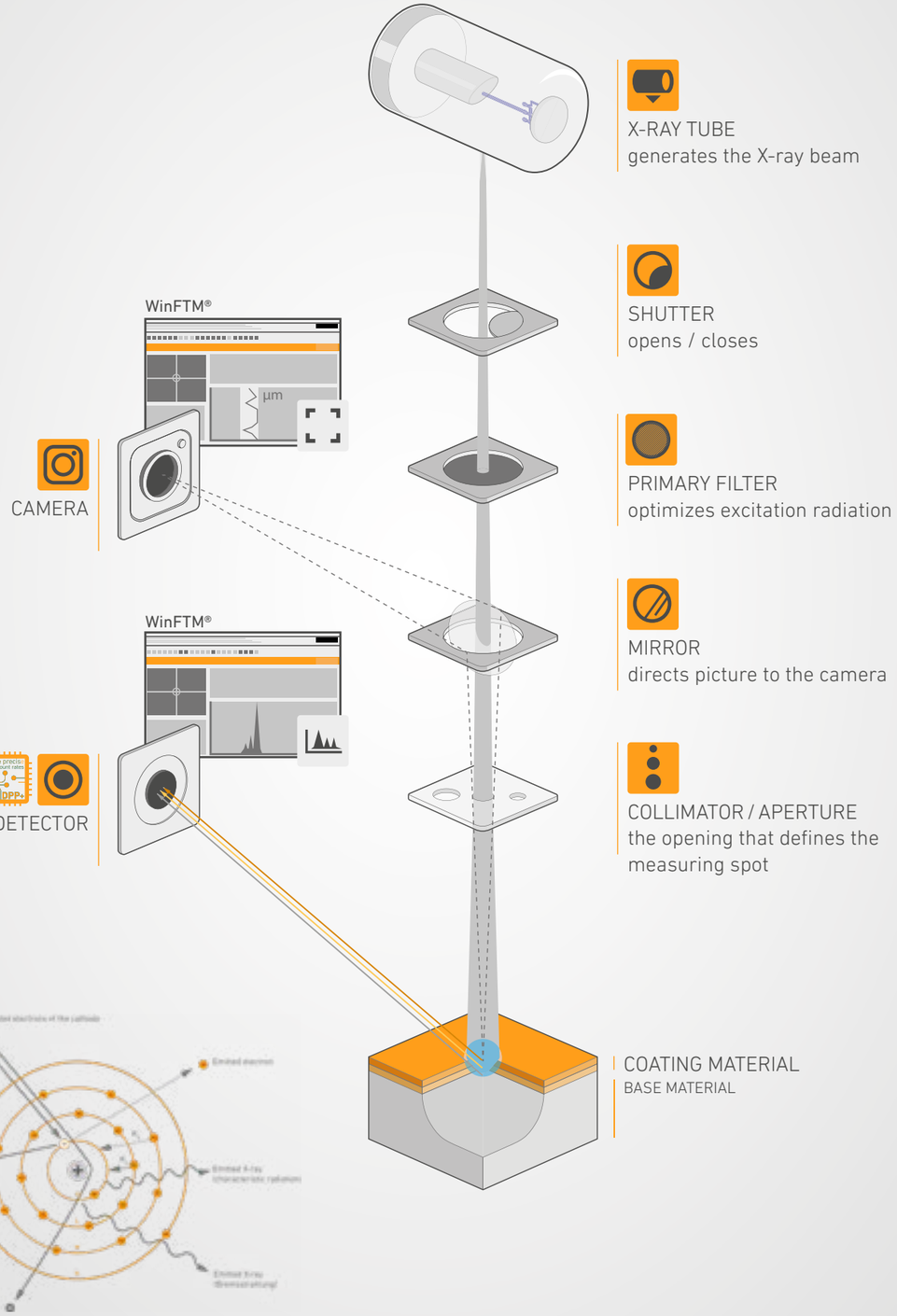
Qualitative element analysis with automatic element identification
Analyze unknown bulk materials with automatic element identification in just a few clicks. WinFTM® automatically identifies the chemical elements contained, calculates the concentrations, and provides you with the percentages.



Solution analysis of electroplating baths
An additional module of the WinFTM® is available for solution analysis of electroplating baths, which automatically converts the various mass fractions into solution concentrations. Specifically programmed for automated quality control in electroplating plants, the module allows you to continuously monitor up to four electroplating baths inline via separate channels.



Tutorials and webinars:
Scan the QR code and find out more about **WinFTM®**.



Contactless. Non-destructive. Efficient.

X-ray fluorescence analysis is a clean, non-contact, non-destructive and fast measurement method working for all elements of technical relevance. It is based on the phenomenon that atoms, when excited by primary X-rays, release energy in the form of element-specific fluorescence radiation. The spectrum of the emitted radiation provides information about the makeup of the sample. This enables both analysis of the material composition and measurement of a coating's thickness.

X-ray tube: The X-ray tube generates the primary X-ray radiation. More advanced models have a high-resolution microfocus tube. Devices thus equipped allow for smaller measuring spots.

Shutter: Integrated into the beam path, the shutter is a safety device. It prevents primary radiation from entering the measuring chamber. The system only unlocks for the duration of the measurement, and only when the lid is closed. This prevents the risk of harm to the operator.

Primary filter: Depending on the filter used, the excitation conditions can be adjusted for different measuring tasks.

Camera / Mirror: The mirror directs the image to the camera. This allows the positioning of the measuring spot to be monitored.

Collimator / Aperture: The aperture restricts the diameter of the primary beam, ensuring that a measuring spot of defined size is excited. With smaller apertures the majority of the primary radiation is shielded from the sample. Polycapillary optics, on the other hand, focus the entire X-ray radiation onto a tiny surface, allowing for short measuring times even with small measuring spots.

Detector: Its quality determines for which measuring tasks an instrument is suitable. Fischer offers three types of detectors:

Proportional counter tube: The detector for simple measuring tasks is predestined for the measuring thicker layers with small measuring spots.

Silicon PIN diode (PIN): The mid-range detector can be used for both material analysis and coating thickness measurement of more complex measurement tasks.

Silicon drift detector (SDD): The strengths of this modern semiconductor detector lies in its ability to measure very thin layers and perform trace analysis in the ppm range.

Digital Pulse Processor (DPP): The in-house developed Fischer DPP is a high-tech component that processes very high pulse and counting rates. It amplifies the events recorded by the detector. Together with the detector, the DPP is responsible for very high stability and energy resolution. Regardless of the number of pulses per second.

Set with calibration standards

Standards you can rely on

It all depends on the right measure
Only a well-calibrated measuring instrument delivers correct results. For this reason, Fischer relies on the highest accuracy for its calibration standards. Our in-house calibration laboratories produce traceable calibration standards, also known as reference or comparison standards, which are recognized all over the world.

Calibration standards are foils or coated base material. Foil standards can be combined with other materials for further adherence to your measuring task.

Whether coating thickness measurement, material analysis or material testing, with well over 500 different calibration standards, Fischer has the right standards for every application in its range. With prefabricated sets, for example for printed circuit boards, you are also ideally equipped for special tasks.

Safety through our DAkkS calibration laboratory
Fischer runs several accredited calibration laboratories worldwide. Our speciality: We are the first and only company with its own calibration laboratory in Germany that is accredited according to DIN EN ISO/IEC 17025 for the mechanical measurand "mass per unit area". By tracing the measurements back to national standards and thus to national metrology institutes such as the Physikalisch-Technische Bundesanstalt (PTB), the National Institute of Standards and Technology (NIST) or the National Institute of Metrology (NIM), we achieve the highest quality standards. The internationally recognized calibration certificates and certificates of analysis give you the necessary security for your product quality and strengthen the confidence of your customers.

Unique service – Your product as an individual calibration standard
In addition to in-house manufactured and certified standards, Helmut Fischer's calibration laboratory also offers ISO/IEC 17025 certification for specific customer material. Benefit from customized calibration standards by having your sample certified as a calibration standard by our measurement experts. So now you can use your workpieces for process control, quality control or development – all thanks to the calibration certificate!

Please feel free to contact us! We advise you on suitable calibration standards and what calibration strategy to follow. **sales@helmut-fischer.com**

Application consulting

Everything for your measuring task

Your quality is our mission
Successful quality management is the foundation of a successful company. We make a measurable contribution to this, as only the right measurement technology combined with the right measuring method and correct use of devices lead to reliable, valid quality control measurements. Our specialists are just the right point of contact for your concerns and challenges, your requirements in measurement technology, and for all other questions relating to your measuring task.

Wide-ranging expertise for precise measurement results
Specialists from the fields of physics, materials science and engineering in seven application laboratories in Germany, Switzerland, China, USA, India, Japan and Thailand are available to provide you with advice and assistance, whether helping to choose the right measuring instrument, developing an in-depth measuring strategy or defining the right measurement program. Especially when solving complex measuring tasks, you benefit from our application consulting. This way, your employees always know what is important for the measurement.

Get an overview of our product portfolio in the application laboratories on site. Our devices are available for you to test.

All application laboratories are optimally networked with each other as well as with research and educational institutions and industry. In this way, we ensure that you have access to cutting-edge expertise worldwide. And we make sure that we have the right answers to your questions.

Our services at a glance

- Technical advice by email, telephone or in person at the application laboratory
- Support with operation and calibration as well as with the implementation of new measurement tasks
- Individual sample testing with your components
- Sample testing live: We measure your sample and you are live with us
- Contract measurements with inspection report according to ISO 17025 (only in selected laboratories)

Global support for your application

Whether remotely or on site, we stand by your side with expert advice and answers for your application questions. Visit Fischer in one of our application laboratories or get advice from your local Fischer representative.

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Service

A reliable partner for the entire life of your device

All-round worry-free package with maximum flexibility
For over 70 years, we have been supporting our customers with outstanding products and unique services. We attach just as much importance to fast and reliable service as we do to the quality of our products. As part of our 360° support, our service experts will assist you with the commissioning, inspection, and maintenance of your device. With our product trainings, we teach you how to use your measurement system.

Your advantages of regular inspections
To ensure that your devices stay with you over a long period of time and provide reliable measured values, we recommend regular inspections – ideally at annual intervals. All inspections are carried out by our trained and experienced service personnel. Thanks to our global support network, we are flexibly available in your area and provide individual advice and support on site with fast response times.

Through regular inspections, you extend not only the life of your device but also keep your downtimes to a minimum. We plan inspection times together with you at an early stage and coordinate them with your production schedule. The same applies to our spare parts: We only use original parts of the highest quality.

There for you in every respect

- Individual service concept tailored to your requirements for the quality control process
- Telephone hotline and remote support through our qualified X-ray service specialists
- On-site service in 21 countries and in your national language
- If required, individual instruction during initial commissioning, customized task programming and product trainings (user training)
- Customized inspection contracts with scheduled maintenance
- Recertification and calibration service for reliable measurement results
- Provision of rental equipment on request*

* Only for selected devices and in selected subsidiaries.

> At Fischer, the customer relationship does not end with the sale of an instrument – that is only when it begins.

Paul Comer, Technical Director at Graphic Plc, GB

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sales@helmut-fischer.com

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