aczet®

... Since 1986

X-ray Fluorescence (XRF)

Non-Destructive Analysis for Precious Metals

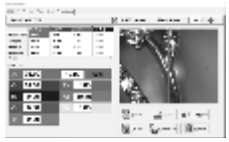
Solution Simplified

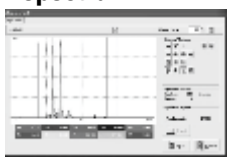
www.aczet.com

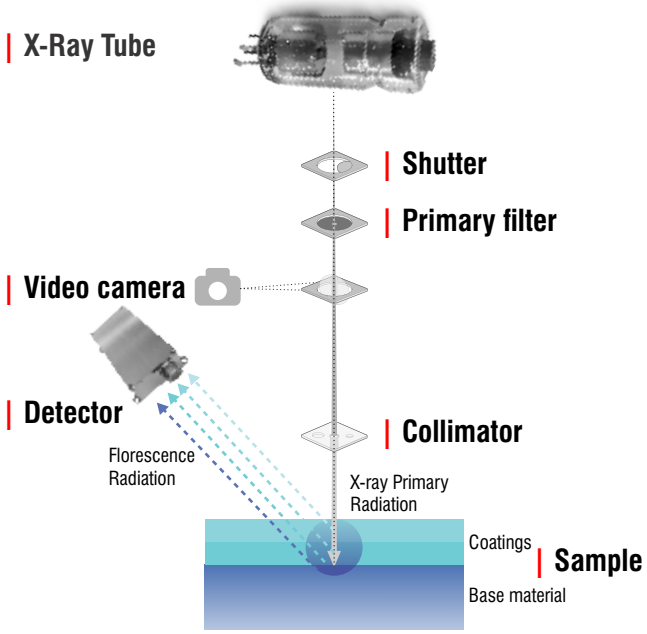
It is Fast, Non-Destructive, Accurate yet Easy

Sometime the smallest detail establishes success. Whether for material analysis or coating thickness measurement ACZET is your partner of choice for the precise and reliable measurement technology in the field of X-ray Fluorescence Analysis. With our Xray System we offer highly accurate measurement solution to make your work easier. Measuring challenge is easy if you as a customer have the right instrument. More than just instruments we offer the best quality, we rely on a detailed analysis, competent advise and commissioning as well as efficient service.

Principle of X-Ray Measurement







X-ray fluorescence analysis is a Non destructive, non-contact, clean and fast measurement method. It is based on the occurrence 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 element present on the sample, which can be detected by detector based on gas filled prop counter or solid state silicon pin diode. This enables both analysis of the material composition and measurement of a coating's thickness.

Detector

You can choose from three different detector types for the optimal solution of your measurement task based on your application : proportional counter, silicon PIN diode and silicon drift detector.

Proportional Counter

- Suitable for simple measurement
- 25.4mm x 50.8mm very large detector active area for higher count rate, yield better accuracy and repeatability.
- Ideal for measuring complex shape samples and different measuring distance.

Silicon Pin (Si-PIN)

- Suitable for Demanding measurements
- High energy resolution
- Wide detection range
- Ideal for measuring thin layer

Silicon Drift Detector (SDD)

- Suitable for highly Demanding measurements including multilayer measurements
- Highest energy resolution and detection sensitivity can measure light elements in ppm range.
- Lower noise > Better resolution help better accuracy
- Highest count rate >1000,000 cps

GERMAN Engineered

- Our instruments individual parts to software are developed in GERMANY. Aczet XRF is produced under GERMAN technological License from company Roentgen Analytik GmbH.

Digital Pulse Processor (DPP)

- Aczet DPP is generate very high pulse and count rates. It amplifies the signal detected by the detector. Together with the detector, the DPP is equally responsible for very high stability and energy resolution.

Diverse Calibration Sample

- More than 3 decade of field experience help us widening calibration library made it possible to perform diverse calibration for each unit leave our works.

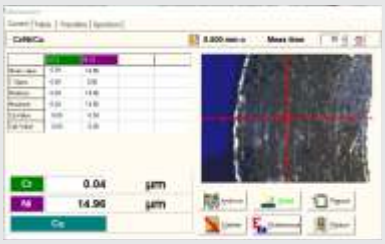
Micro Focus X-ray Tube

- The X-ray tube generates the primary X-ray radiation. Advanced micro focus tube are engaged to focus large part of the primary radiation onto a very small measuring spot

Material Analysis

- Versatile Material Analysis software x-Master based on both Empirical and Fundamental method help yield accurate Measurement as well as identify and measure any metal standard free.

Coating Thcikness

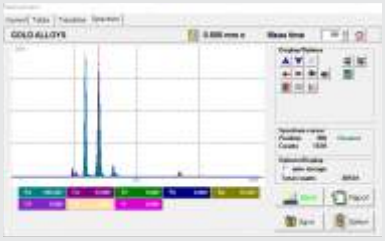


- From simple coating thickness measurements in the electroplating industry, such as zinc on iron, multi-coating applications, sophisticated precious metal coating.

Bath Analysis

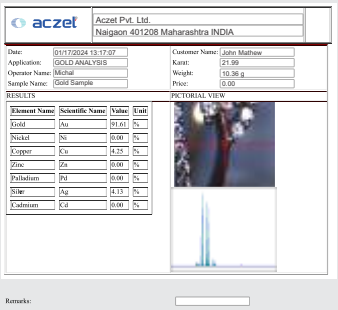
- Bath analysis in the electroplating industry Measurement of e.g. thin gold, palladium in jewellery industry.

Spectrum



- Typical gold spectrum with qualitative analysis information.
- Y axis is theoretical intensity. X axis is measured intensity.
- After fitting a linear regression, the R2 value demonstrate the excellent linear of the calibration curve. In return, The excellent linear calibration curve ensures the wide range test accuracy from low to high karat of gold.

User Friendly Software



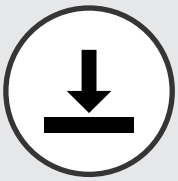
- Most comprehensive software for material analysis including Coating thickness measurement as well as bath analysis.
- Convenient calibration function
- Fully customizable reports and creation of individual measurements print formats.
- Statistical data processing with mean value, standard deviation, high/low reading, trend line etc.
- High resolution CCD camera with optical zoom help positioning the spot for measurement.

Safe

- Full-protection instruments in accordance with current radiation protection regulation.
- The shutter is a safety device. It prevents primary radiation from entering the measuring chamber when measurement is in progress thus safeguard operator from risk of x-Ray exposures.

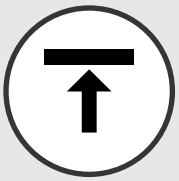
Measuring Directions

Benefits of the Different Measuring Directions



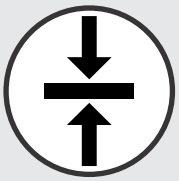
Top down

- Precise positioning infect you can position any point what you can see, Inner Surface & Outer surface testing possible, which is best suited for un-even surface jewellery and rings.
- Large measuring area



Bottom up

- Time saving since focusing is often not required
- Easy do not need any special skill for focusing
- Compact foot print for the instrument



Flexible

- Portable instrument
- Mobile measurement is possible
- Measurement on very large components is possible
- Battery operation

Diversity

Large Sample Chamber

- Even with large Samples, measuring points are possible on the entire sample surface due to larger sample chamber.

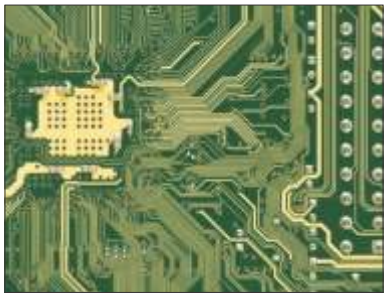
Compact

- New Generation Space saving Built-in Touch screen PC.

Flexibility

- Element Analysis up to 24 elements simultaneously.

JEWELRY | GOLD LOAN | ELECTRONICS - PCB, COMPONENTS & CONNECTORS | METAL FINISHING | TOOLS | RoHs | SANITARY



Cube

Dimension 350 x 450 x 310 mm
Weight 27 kg

Compact Eco

Dimension 630 x 430 x 420 mm
Weight 45 kg

Model	Cube / Compact Eco		
Detector	**Proportional Counter**	**Silicon Pin (Si-PIN)**	**Silicon Drift Detector (SDD)**
Measuring Direction	Top Down		
X-Ray Source	W-Target Tungsten X-Ray Tube with oil cooled		
High Voltage	50kV / 1.2MA, Software Control Optimized		
Collimator Ø mm	**0.3**	**0.5**	**0.5**
Elements Range	All elements between Manganese Mn(25) to U(92)		Aluminium Al(13) to Uranium U(92)
Measurement Time	10 Sec ~ 60 sec. (User Selectable)		
Sample Positioning	Manual Stage Z axis		
Video Microscope	High resolution CCD Color Video camera with cross hair		
PC Interface	External		
Sample Chamber	Cube 335 x 225 x 180 mm (W x D x H) | Compact Eco 390 x 430 x 270 mm (W x D x H)		
Power Supply	230VAC, 50/60Hz, 120W / 100W (110v available on request)		

Stark

Dimension 350 x 450 x 310 mm
Weight 32 kg

Stark In-built

Dimension 350 x 450 x 310 mm
Weight 32 kg

Model	StaRk / StarRk In-built / StaRk Pro		
Detector	**Proportional Counter**	**Silicon Pin (Si-PIN)**	**Silicon Drift Detector (SDD)**
Measuring Direction	Bottom Up		
X-Ray Source	W-Target Tungsten X-Ray Tube with oil cooled		
High Voltage	50kV / 1.2MA, Software Control Optimized		
Collimator Ø mm	**0.3**	**0.5**	**0.5**
Elements Range	All elements between Manganese Mn(25) to U(92)		Aluminium Al(13) to Uranium U(92)
MeasurementTime	10 Sec ~ 60 sec. (User Selectable)		
Sample Positioning	Auto focussing		
Video Microscope	High resolution CCD Color Video camera with cross hair		
PC Interface	StaRk / StaRk Pro - External, StaRk-Inbuilt -Touch Screen industrial Grade PC		
Sample Chamber	300 x 290 x 100 mm (W x D x H)		
Power Supply	230VAC, 50/60Hz, 120W / 100W (110v available on request)		

Stark SDD Pro

Dimension 400 x 405 x 455 mm
Weight 40 kg

Nanoris

Dimension 79 x 254 x 280 mm
Weight 1.5 kg

Model	Nanoris	
Detector	**Silicon Pin (Si-PIN)**	**Silicon Drift Detector (SDD)**
Measuring Direction	Flexible (Top Down & Bottom Up both possible)	
Excitation Source	50KV/200mA upper limit, tube pressure tube flow can be adjusted freely, W target	
Analysis Elements	All elements between Mg and U	
Display	4.3 "industrial grade resistance touch screen Automatically adjust display brightness according to external environment brightness	
Data Processing	Built-in 32GB storage USB, can connect the device to the Internet, remote setting and maintenance of the instrument	
Heat dissipation	Equipped with a dedicated T-shaped radiator to dissipate the heat ; no need to wait for cooling of detector time again.	
Safety	It automatically senses samples ahead for enhanced radiation safety and protection. Waterproof, dustproof and shockproof carrying case. ACZET special safety rope.	
Power Supply	Intelligent battery management through MSBUS, real-time monitoring of the remaining capacity of battery. The battery complies with air transport regulations of dangerous goods. A single battery can last 8 hours (2 standard battery supply)	

All Specifications & Dimensions are subject to change without Prior Notice.

INDIA
Aczet Pvt. Ltd.
E-2, Plot No. 15, WICEL,
Opp. Seepz Gate No. 1,
Andheri (E), Mumbai 400093.
Email : export@aczet.com
sales@aczet.com
Phone : + 9122 4243 7700

USA
Aczet INC.
1637 Stelton Road Unit B-5,
Piscataway, NJ 08854
Email : tejas@aczet.com
Toll Free : 1800 997 1440

UAE
Aczet Instruments LLC
P.O.Box 27137, Old Goldsouq,
Deira - Dubai.
Email : danny.s@aczet.com
Phone : +971 50 6593253

THAILAND
Aczet Thailand Co. Ltd.
1A1, Gr. Floor, BIS Building,
119 Mahesak Road, Suryawong,
Bangrak, Bangkok - 10500
Email : utkarsh.p@aczet.com
Phone : +66 920456757

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