KaratMeter B-Series

Advanced t op-down g eometry desktop metal spectrometer for determination of precious alloys and common non-ferrous alloys using innovative spectroscopy principle.

Quantum the well-known organization consist group of professionals, each having several years of experience in the field of analytical, scientific, process, test & measuring instrumentation. The company with its experience for more than 2 decades in X-ray technology introduces always innovation in precious measurements with latest hardware, intuitive software and simplicity in operation at affordable cost.

Karatmeter B-series is desktop fast, precise & non-destructive unit for accurate analysis of bulk material & layer thickness. The unit precisely & swiftly determines the percentage by weight (or Karat) in a solid piece of jewellery, precious coins or any other piece of noble metal making use of X-ray assay technique. It successfully determines the elemental composition of Gold alloys, Platinum group metals & Silver alloys. The analysis of bulk material & layer thickness is non-contact and non-destructive without any requirement for sample preparation. With additional calibration module, it can be even use for special coating thickness applications and plating chemical analysis.

Who Benefits

Karatmeter B-series desktop metal spectrometer is best suited to customers who have:

- Larger samples that require only one test location
- Filigree parts that require simple spot checks
- Budget restrictions with desire to upgrade at later date
- The need to meet the requirements of ISO, ASTM & BS standards

Key Features

Karatmeter B-series is basic t op-down measurement configuration unit. The sample stage can be either fixed (manual z-stage) or optional motorized z-stage or programmable x-y stage; operator place parts into the chamber and use a live video image to align the desired location within the guides of the screen.

Configuration

The standard configuration includes a dual collimator, a camera with a fixed focal distance, solid-state silicon PIN detector, and a long-life X-ray fluorescence tube. As with all existing or new models, components can be upgraded to include multiple collimators, a variable focal depth camera or high resolution SDD/FSDD detector.

Elemental Analysis

Coating Thickness Measurement

Solution & Powder Analysis

KaratMeter B-Series

Standard Specifications:

Principle Energy dispersive (ED-XRF) X-ray fluorescence spectrometer to measure precious metals and alloys.

Design Most preferred top-down geometry to measure filigree samples and internal parts/joints. The front large door opening allows easy sample handling for positioning and measurement. The sample is visible through protective door window during measurement.

Electrical Conditions Operates on standard external AC adaptor works with mains power supply between 110-240VAC, 50/60Hz, 100W.

External Conditions Operating 0 - 40degree C
Storage/transportation 0 - 50 degree C
Relative Humidity < 95%

Sample Handling Manual sample positioning using scissors z-stage, optional motorized z-stage and programmable x-y stage.

Sample Image High resolution CCD color video microscope for optical image of sample position with cross hair and spot size on calibrated scale. Adjustable illumination and upto 40x.

Interface Standard single USB interface with external laptop/desktop WIN based computer.

Software XralizeR special software package pre-calibrated for major precious metals and alloys with help driven menu and customized report generation formats.

Approvals CE design approval, AERB approval for radiation safety, IP40 dust & moisture protection, DIN ISO 3497 & 23345 and ASTM B 568 approvals for standard XRF measuring techniques.

	Karatmeter B1	Karatmeter B2
Excitation Source	W-target, micro-focus, Be-window tube	W-target, micro-focus, Be-window tube
High Voltage	50kV/1mA programmable	50kV/1mA Programmable
Primary Filter	Fixed Al filter for precious alloys	Fixed Al filter for precious alloys, Optional 5-slectable filters for specific applications
Collimator	Dual 0.5mm & 1.5mm	Dual 0.5mm & 1.5mm Optional 4-position collimator changer
Detector Type	Silicon PIN diode detector, peltier cooled	Silicon drift SDD detector, peltier cooled optional FSDD detector
Resolution	< 180eV	< 160eV Optional Fast SDD package < 145eV
Sample Handling	Manual scissor type z-stage Optional motorized z-stage with laser auto-focus Optional manual X-Y stage	Manual scissor type z-stage Optional motorized z-stage with laser auto-focus Optional manual X-Y stage
Element Range	Ti (22) to U (92)	Al (13) to U (92)
Precision @60sec	< 1%	< 0.5%
Application Area	Corporate & chain jewellery showrooms, Assay offices, Gold exchange and common coating thickness applications	Gold refineries, Assay offices, Hallmarking centres, Bullion traders & merchants, major coating thickness and plating solution analysis
Dimensions (HxWxD)	400x400x480mm	400x400x480mm
Weight	approx. 30kgs	approx. 30kgs

K aratmeter is a registered trademark of Quantum Equipment Co. Pvt. Ltd., Mumbai India.
The abov e listed specifications are standard and any specification change or special product modification available upon request.

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