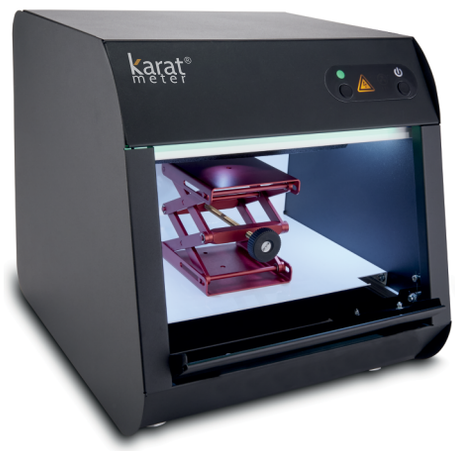
KARAT METER Q-series



Karatmeter Q-series "top-down" measuring instrument optimized for fast, non-destructive and precise testing of jewellery samples and precious alloys

Quantum the well-known name in jewellery industry since over 2 decades introduced new series in precious measurement with latest hardware technology, intuitive software package, simplicity in operation at affordable cost. The complete spectrometer is controlled by external PC using standard USB interface. The entire operation and measurement evaluation is performed by PC using powerful Archer software package.

The combined force of technology and experience innovate this latest product for fast, non-destructive and accurate measurements of jewellery articles and precious alloys. The unit is most favourable for jewellery showrooms, bullion merchants, hallmarking & assaying, refineries, gold manufacturers, pawn shops, bank valuation, silver articles, dental alloys and many more. With additional calibration module, it can even use for coating thickness and plating chemical analysis.

Intuitive User Interface

- Simple compact design for daily testing functions
- Closed couple top geometry for increased precision & efficiency
- Advanced functionality access to power users
- Unlimited access for creating new applications
- Easy data storage/recall and transfer facility
- Customizable keys for quick analysis and reports
- Quick plug-and-play access with diagnostic mode

Karatmeter is a fast, precise and non-destructive tool for accurate analysis of bulk material and layer thickness. The unit precisely and swiftly determines the percentage by weight (or karat) in a solid piece of jewellery, precision coins or any other piece of noble metal making use of XRF assay technique. It successfully determines the elemental composition of all gold alloys, platinum group metals, silver and dental alloys. The analysis of bulk material and layers is non-contact, non-destructive method without any requirement of sample preparation.

Elemental Analysis

Coating Thickness Measurement

Solution & Powder Analysis

KARAT METER Q-series

Standard Specifications:

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

Design — Universal robust **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 - 40° C
Storage/transportation: 0 - 50° C
Relative Humidity: < 95%

Sample Handling — Manual sample positioning using scissors z-stage, optional motorized 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 magnification upto 40x

Interface — Standard single USB interface with external laptop/desktop WIN based computer supplied by user

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 23345 & 3497 and ASTM B 568 approvals for standard XRF measuring techniques

	Karatmeter Q3	Karatmeter Q4
Excitation Source	W-target, micro-focus, Be-window tube	W-target, micro-focus, Be-window tube
High Voltage	50kV/1mA Programmable	50kV/1mA Programable
Primary Filter	5-slectable filters	5-selectable filters
Collimator	Dual 0.5 & 1.5mm	4-selectable
Detector Type Resolution	Silicon drift SDD detector, peltier cooled <160eV	Fast large window silicon drift FSDD detector, peltier cooled <145eV
Element Range	Al (13) to U (92)	Na (11) to U (92)
Precision @60sec	< 0.3%	< 0.3%
Application Area	Refineries, assay offices, hallmarking centres, bullion traders	Refineries, goldsmith, hallmarking and assaying centres, bullion merchants
Dimensions(WxDxH)	400x450x400mm	400x450x400mm
Weight	approx. 24kgs	approx. 24kgs

- Karatmeter is a registered trademark of Quantum Equipment Co. Pvt. Ltd., Mumbai – India
- The above listed specifications are standard and any specification change or special product modification available upon request

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