

KARAT METER G-series

Fixed sample position “bottom-up” geometry bench-top metal spectrometer for determination of precious alloys is and jewellery samples



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 spectroscopy introduces always innovation in precious measurements with latest hardware, intuitive software and simplicity in operation at affordable cost.

Karatmeter G-series is bench-top, fast, precise & non-destructive unit for accurate elemental analysis. Fixed sample position 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 DSP technology 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 G-series metal spectrometer is ideal for labs and production lines, particularly where users have:

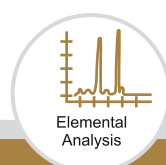
- Limited bench space
- Budget limitations
- A preference for “bottom-up” operation with optional motorized z-focusing
- The need to position smaller samples quickly and easily for fast output

Key Features

The two most distinctive features of the G-series are precision video imaging, and “bottom-up” measurement using a fixed plate or optional motorized z-axis with laser-based auto-focus. An optional manual X-Y stage with 1.5X1.5” travel facilitates easy positioning of small and large parts. These features are unique as compared with other suppliers.

Configuration

The standard configuration includes a dual collimator, a camera with a fixed focal distance, solid-state silicon PIN detector, and a long-life excitation source. 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.



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Standard Specifications:

| | |
|------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Principle | Soft-ray fluorescence spectrometer to measure precious metals and alloys. |
| Design | Universal robust “bottom-up” geometry to measure samples with fast output. The large door opening hood allows easy sample handling for positioning and 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 degree C Storage/transportation 0 - 50 degree C Relative Humidity < 95% |
| Sample Handling | Fixed sample plate, optional motorized Z-axis with laser based auto-focus and optional manual X-Y position 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. |
| Software | ArcheR special software package pre-calibrated for major precious metals and alloys with help driven menu and customized report generation formats. |

| | Karatmeter G1 | Karatmeter G2 | Karatmeter G3 | Karatmeter G4 |
|-------------------|---------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------|----------------------------------------------------------------------------|
| Excitation Source | W-target, thermally stabilized tube | W-target, micro-focus, Be-window tube | W-target, micro-focus, Be-window tube | W-target, micro-focus, Be-window tube |
| High Voltage | 50kV/1mA programmable | 50kV/1mA programmable | 50kV/1mA Programmable | 50kV/1mA Programable |
| Primary Filter | Fixed Al filter | Fixed Al filter | 5-selectable filters | 5-selectable filters |
| Collimator | Fixed 0.8mm | Dual 0.8 & 1.2mm | Dual 0.8 & 1.2mm | 4-selectable |
| Detector Type | Silicon PIN detector, peltier cooled | Silicon PIN detector, peltier cooled | Silicon drift SDD detector, peltier cooled | Fast large window silicon drift FSDD detector, peltier cooled |
| Resolution | <180eV | <180eV | <160eV | <145eV |
| Element Range | Ti (22) to U (92) | Al (13) to U (92) | Al (13) to U (92) | Na (11) to U (92) |
| Precision @60sec | < 0.5% | < 0.5% | < 0.3% | < 0.3% |
| Application Area | Gold loan, banks, pawning, retail jewellery shops | Corporate & chain showrooms, assay offices, Gold exchange | Refineries, assay offices, hallmarking centres, bullion traders | Refineries, goldsmith, hallmarking and assaying centres, bullion merchants |
| Dimensions(WxDxH) | 350x450x350mm | 350x450x350mm | 350x450x350mm | 350x450x350mm |
| Weight | approx. 24kgs | approx. 24kgs | 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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