
VANTA Specifications

VANTA

Rugged. Revolutionary. Productive.



Vanta™ handheld XRF analyzers are rugged and built for analytically demanding applications in the harshest environments. Vanta analyzers are IP65* rated for protection against dust and water, are drop tested, and built to withstand a temperature range of -10 °C to 50 °C (14 °F to 122 °F).**

Vanta analyzers provide fast, accurate elemental analysis. Each device features Olympus' Axon Technology™, a revolution in XRF signal processing that provides accurate, repeatable results for greater productivity and a fast return on investment. Vanta analyzers feature an intuitive interface and application-specific software so new users can work with the device with minimal training. Data is easily exported wirelessly or via USB.

The Vanta Series

No matter the model, each Vanta™ analyzer is engineered for durability and analytical superiority and comes with a three-year warranty. Olympus manufactures Vanta analyzers to suit a variety of applications depending on your needs.

M Series

Our most powerful Vanta analyzers feature exceptional performance. Each M Series analyzer comes equipped a large-area silicon drift detector, your choice of either a rhodium (Rh) or a tungsten (W) anode, and a 50 kV X-ray tube.

C Series

The C Series combine value with superior speed, limits of detection (LODs), and elemental range. Each C Series analyzer is equipped with a silicon drift detector and your choice of an Rh or W anode 40 kV X-ray tube, or a silver (Ag) anode at 50 kV X-ray tube.

L Series

Get the ruggedness, ease of use, and data management features of Vanta analyzers in a cost-effective PIN instrument. The L Series is designed for maximum uptime and a lower cost of ownership for reliability in the field.

Vanta Specifications

| | |
|--------------------------------|---|
| Dimensions (W × H × D) | 8.3 cm × 28.9 cm × 24.2 cm (3.25 in. × 11.4 in. × 9.5 in.) |
| Weight | 1.70 kg (3.75 lb) with battery, 1.48 kg (3.25 lb) without battery |
| Excitation Source | 4-Watt X-ray tube with application optimized anode material (rhodium (Rh), silver (Ag), or tungsten (W)) M Series (Rh & W) and C Series (Ag): 8–50 kV C Series (Rh & W): 8–40 kV L Series (W): 35 kV (2 Watts) |
| Primary Beam Filtration | 8-position auto selected filter per beam per mode; optional collimation to 3 mm diameter beam spot VLW: Fixed aluminum filter and no internal collimation |
| Detector | M Series: Large area silicon drift detector C Series: Silicon drift detector L Series: Silicon PIN detector |
| Power | Removable 14.4 V Li-Ion battery with hot-swap capability or 18 V power transformer 100–240 VAC, 50–60 Hz, 70 W max |
| Display | 800 × 480 (WVGA) LCD with capacitive touch screen supporting gesture control |
| Operating Environment | Temperature: -10 °C to 50 °C (continuous duty cycle with optional fan) Humidity: 10% to 90% relative humidity non-condensing |
| Drop Test | Military Standard 810-G 4-foot (1.3 M) drop test |
| IP Rating and Detector Shutter | M Series IP64: dust tight and protected against water splashing from all directions C and L Series IP65: dust tight and protected against water jets from all directions M and C Series: Solid detector shutter to help prevent detector damage |
| Pressure Correction | Built-in barometer for automatic altitude and air density correction |
| GPS | Embedded GPS / GLONASS receiver |
| Operating System | Linux® Cloud enabled with user fleet manager capability |
| Data Storage | microSD™ slot with removable 1 GB Industrial SD card included |
| USB | (2) USB 2.0 type A host ports for accessories such as wireless LAN, Bluetooth®, and USB flash drives. (1) USB 2.0 type mini-B port for connection to computer. |
| WiFi | Supports 802.11 b/g/n (2.4 GHz) via optional USB adaptor |
| Bluetooth | Supports Bluetooth® via optional USB adaptor |
| Aiming Camera | Full VGA CMOS camera (Optional) |
| Panoramic Camera | 5-megapixel CMOS camera with autofocus lens (Optional) |
| Warranty | Three-year warranty |
| Optional Accessories | Field Stand, Soil Foot, Holster, Work Station, Weld Mask, Hot Heel, and Probe Shield and VLW Collimation Mask |

OLYMPUS SCIENTIFIC SOLUTIONS AMERICAS
is certified to ISO 9001, ISO 14001, and OHSAS 18001.

*M Series analyzers are IP64 rated.

** With optional fan. The fan assembly is IP54 rated. Operates continuously at 33 °C without the fan.

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VANTA Coating Method

The Olympus Vanta™ Coating Method

Olympus' Vanta VCR and VMR handheld XRF analyzers are now available with Coating Method functionality. The Vanta Coating Method can measure thicknesses in microns in seconds. Up to three layers of coatings can be measured on any type of substrate — metals, plastics, glass, and even wood.

A wide range of industries need to measure coating thicknesses. For example, zinc impedes corrosion and is moisture resistant, making it a useful coating for various metals. Thickness guidelines for zinc coatings need to be specified and verified for proper protection. Other common engineered coatings include nickel and chromium, both used for their corrosion resistance.

The Vanta Coating Method features:

Element configuration: The available elements are those with an atomic number greater than and including Ti. No element can be repeated in more than one layer, including the substrate. Elements with an atomic number less than Ti are not supported at this time.

Optional empirical one-point calibration: Customers can use an in-house certified sample to adjust the calibration.

Number of layers: The Vanta Coating Method can measure the thickness of up to three layers, however the layers must be thin enough that X-rays can escape to the detector from the bottom layer.

Maximum layer thickness: The chart to the right provides the approximate maximum thickness for the coating of a given element. It assumes no interference from inter-element effects. If the coating element and substrate element have similar X-ray energies, results may vary.

Substrate: Any substrate material can be analyzed as long as it does not contain elements in common with the coating layer.

| Element* | Energy Line | Maximum Thickness (microns) |
|------------------------------------|-------------|-----------------------------|
| Titanium (Ti) | Ka | 20 |
| Vanadium (V) | Ka | 20 |
| Chromium (Cr) | Ka | 25 |
| Manganese (Mn) | Ka | 25 |
| Iron (Fe) | Ka | 25 |
| Cobalt (Co) | Ka | 30 |
| Nickel (Ni) | Ka | 30 |
| Copper (Cu) | Ka | 30 |
| Zinc (Zn) | Ka | 30 |
| Hafnium (Hf) | Lb | 10 |
| Tantalum (Ta) | Lb | 10 |
| Tungsten (W) | Lb | 10 |
| Rhenium (Re) | Lb | 10 |
| Lead (Pb) | Lb | 20 |
| Bismuth (Bi) | Lb | 20 |
| Zirconium (Zr) | Ka | 35 |
| Niobium (Nb) | Ka | 40 |
| Molybdenum (Mo) | Ka | 40 |
| Palladium (Pd) | Ka | 40 |
| Silver (Ag) | Ka | 45 |
| Tin (Sn) | Ka | 45 |
| Antimony (Sb) | Ka | 45 |
| Cadmium (Cd) | Ka | 30 |
| Gold (Au) (not in default regions) | Lb | 10 |

* Elements listed in blue are commonly used for coatings