

Industrial

Vanta™ Handheld XRF Analyzer

Control the Quality of Medical Device Materials



EVIDENT

Greater Confidence in Your Products

Vanta™ handheld XRF analyzers provide fast, accurate information on the chemical composition and concentration of tested objects, helping medical device manufacturers and suppliers strictly control the quality of raw materials to finished products. These powerful analyzers can measure chemical elements from magnesium (Mg) to uranium (U) with ppm-level accuracy.

Common Medical Device Inspections

Verify the Safety and Reliability of Medical Device Materials

Implantable medical devices have demanding requirements for material properties, including strength, toughness, corrosion resistance, and biocompatibility. The elemental composition of materials has a significant impact on these properties. Titanium alloy is commonly used for denture and bone implants, cobalt-chromium-molybdenum alloy is commonly used for artificial joints, and stainless steel is commonly used for bone implants.

Vanta analyzers include libraries with over 700 grades and can quickly identify alloy raw materials. Detect a range of elements, including:

- Hazardous/impurity elements: vanadium (V), phosphorus (P), sulfur (S)
- Anti-corrosion elements: niobium (Nb), zirconium (Zr), tin (Sn)
- Elements that can impact physical and chemical properties: titanium (Ti), chromium (Cr), molybdenum (Mo), cobalt (Co)*, aluminum (Al)

Most implantable medical devices also have functional coatings, and Vanta analyzers can assist in analyzing the coating thickness and uniformity.



410-16-20				1/1
精确 - Can ID 416 w beam 2-Sulfur; 410 & 420 specs overlap & may not always separate				
UserFactorName: Ni				
El	%	+/- 3σ	410-16-20	
Fe	87.50	0.12	83.75	88.50
Cr	11.951	0.100	11.50	14.00
Mn	0.407	0.070	0.00	1.25
Ni	0.072	0.026	0.00	0.70
V	0.050	0.016	残量元素0.2	
Cu	0.011	0.008	残量元素0.4	
Zr	0.003	0.002	残量元素0.1	
Mo	0.002	0.002	残量元素0.1	

Detect Restricted Elements in Medical Devices

Article 10 of the European Medical Device Regulation (MDR) regulates the level of CMR substances (carcinogen, mutagen, or substances that cause reproductive toxicity) in medical devices. If a medical device that contains CMR substances in concentrations higher than 0.1% comes into contact with the human body while being used, the substance must be labeled on the device and/or packaging.

RoHS Screening

Government agencies implement the Restriction of Hazardous Substances Directive (RoHS) regulations for certain medical devices and in vitro diagnostic devices (IVDs) with the aim of protecting the public and the environment from the hazards of toxic pollutants present in electrical and electronic products.

The Vanta analyzer works as a rapid screening tool to detect restricted RoHS substances. With fast pass/fail results, the analyzer can improve inspection efficiency and save inspection costs.

Fast, Reliable Results When Safety is Paramount

Rugged

Vanta analyzers are drop tested to US Department of Defense standards (MIL-STD-810G) to protect against falls and reduce the need for costly repairs. They are IP55/IP54 rated for protection against dust and moisture.

Revolutionary

Vanta analyzers incorporate proprietary Axon Technology™, a breakthrough in XRF signal processing that delivers highly repeatable and accurate test results in a short period of time. They provide results with the same accuracy between each test and between individual analyzers.

Productive

Vanta analyzers feature a large, bright touch screen and a smartphone-like user interface. After an inspection is completed, you can save results in multiple file formats, including CSV and PDF, and export them through a wireless (optional) or wired connection.

The Vanta Series

Evident manufactures Vanta analyzers to suit a variety of applications depending on your needs. Each Vanta analyzer is engineered for durability and analytical performance and comes with a comprehensive 3-year warranty.

Vanta Series XRF analyzers feature libraries of more than 700 grades and are able to quickly identify alloy raw materials.



M Series

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

C Series

The C Series combines 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 a 40 kV X-ray tube with a rhodium (Rh) or tungsten (W) anode, or a 50 kV X-ray tube with a silver (Ag) anode.

Element

The Vanta Element series provides elemental analysis for fast alloy grade identification and sorting at an affordable price. To suit your testing needs and budget, the series is available in two models: the Vanta Element analyzer for affordable alloy ID and the Vanta Element-S analyzer for affordable alloy ID with light element detection.

*Evident is dedicated to making people's lives healthier and safer. We are committed to responsibly doing business and serving our markets in alignment with the Guiding Principles on Business and Human Rights set forth by the United Nations.

Specifications

Dimensions (W × H × D)	8.3 cm × 28.9 cm × 24.2 cm (3.25 in. × 11.4 in. × 9.5 in.)
Weight	M series, C series, and L series: 1.70 kg (3.75 lb) with battery, 1.48 kg (3.24 lb) without battery Element series: 1.54 kg (3.39 lb) with battery, 1.32 kg (2.91 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) and Element (W): 35 kV (2 watts) Element-S: 50 kV (Ag)
Primary Beam Filtration	M and C series: 8-position autoselected filter per beam per mode; optional collimation to 3 mm diameter beam spot L series and Element: Fixed aluminum filter and no internal collimation Element-S: 8-position filter wheel
Detector	M series: Large-area silicon drift detector C series and Element-S: Silicon drift detector L series and Element: Silicon PIN detector
Power Supply	Removable 14.4 V lithium-ion battery 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 range for the M, C, and L series: -10 °C to 50 °C (14 °F to 122 °F), (continuous duty cycle with optional fan) Temperature range for the Element series: -10 °C to 45 °C (14 °F to 113 °F) Humidity: 10% to 90% relative humidity, noncondensing
Drop Test	Military Standard 810-G 4-foot (1.3-meter) drop test
IP Rating and Detector Shutter	M series and Element series: IP54 rated for dust protection and protection against water splashing from all directions C and L series: IP55 rated for dust protection and protection against water jets from all directions M and C series: Solid detector shutter helps prevent detector damage
Wireless LAN	Supports 802.11 b/g/n (2.4 GHz) via optional USB adapter
Bluetooth	Supports Bluetooth® with an optional USB adapter
Aiming Camera	Full VGA CMOS camera (optional)
Panorama Camera	5-megapixel CMOS camera with autofocus lens (optional on M, C, and L series)

The Evident Commitment

Evident is a leader in XRF technology with a reputation for quality and accuracy. We are committed to providing the best technical support and after-sales service for our products, applications, training, and technologies through our global network of sales and service teams.

*Cobalt is commonly found in stainless steel, usually at a level of about 0.25%. Therefore, it must be labeled on the medical device to meet regulatory requirements.



Evident Corporation
Shinjuku Monolith, 2-3-1 Nishi-Shinjuku,
Shinjuku-ku, Tokyo 163-0910, Japan

Evident Scientific, Inc.
48 Woerd Avenue
Waltham, MA 02453, USA
Tél. : (1) 781-419-3900