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Thermo Niton XLT 898: Portable Alloy Analyzer (X-Ray tube)

The **XLT-898/898B** analyzer offers the user the speed and efficiency of x-ray tube excitation. It provides the **fastest** and **most accurate** elemental composition of major **alloys** and **alloy grade identification**

ALLOY MODE, Two suites to choose from: **Standard or Electronic**

(*alloy configuration to select upon order):

Standard "G suite" - 24 elements*: Titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, selenium, zirconium, niobium (columbium), molybdenum, palladium, silver, tin, antimony, hafnium, tantalum, tungsten, rhenium, lead, bismuth and aluminium.

Or Alternate "Electronic B suite" – 27 elements*: Titanium, vanadium, chromium, manganese, iron, cobalt, nickel, copper, zinc, selenium, zirconium, niobium, molybdenum, palladium, silver, cadmium, indium, tin, antimony, hafnium, tantalum, platinum, gold, lead, bismuth, mercury and aluminium.

This model is customized to provide metal analysis with **alloy grade identification** in various forms (**powder, solids, rods, pipes, etc**) and for various applications (**scrap/recycling, incoming material QA, metal producers inspection, alloy sorting, aerospace, military, lead-free solder, PMI – Positive Materials Identification in a petrochemical plant or a shipyard, maintenance work, third- party testing services, etc...**), **recovery from electronic scrap**.

Applications for Niton XLT-898/ 898B alloy analyzer are endless.

Elements and sample types:

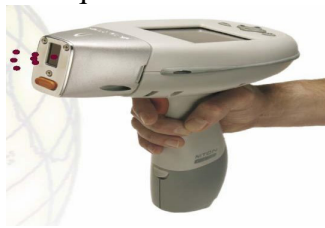
In situ testing with the XLT placed directly on an **alloy sample**, allows for a large number of data points to be collected in a short time. It is a fast and effective way of **determining alloy types and grades** on-site without the wait or cost associated with an outside laboratory. Spot screening for elemental identification is done immediately.

- **Alloy grade identification** Identifies alloy grades and provide chemistry composition in various metal samples: powder, solids, scrap, foil, rod, pipe...
- **PMI** Ideally suited to the testing of fillet welds and small components using an optional collimator. It can also accommodate the rigorous demands of in-service PMI testing of components in excess of 800°F (430°C) with specific handling procedures.
- **Scrap metal recycling** Provides quick information on alloy composition to quickly sort volumes of material and take advantage of sales opportunities.

Niton is a member of both the **ISRI** (International Scrap Recycling Industries) and the **BIR**

(Bureau of International Recycling).

• **Quality Assurance / Quality Control QA/QC** is essential in all manufacturing industries. Product components constructed using out-of-spec materials can have disastrous consequences.



Ex situ testing of properly prepared alloy or mining samples provides rapid laboratory-grade data quality without the wait or the costs associated with using an outside lab. XLt-898 / 898B analyzers are supplied with an alloy standard and have optional wireless capability via Bluetooth for immediate transfer of the data to a PC or laptop. Other optional tools include an alloy test stand and small XRF sample cups and sample zip bags to keep alloy samples and analyze them later.

Niton XLt-898/898B is widely used in manufacturing industries from small metal fabricators to pharmaceutical manufacturing, electric power industry, major aerospace manufacturers. Failure analysis, plant inspection, component validation, operational qualification, etc... are just some of the most common purposes of using a Niton alloy XRF.

SPECIFICATIONS of The XLt-898 / XLt-898B Alloy Analyzer

X-ray Detector

High performance Si-PIN detector, Peltier cooled
Resolution : better than 220eV at Mn K alpha line. Limits :
2 sigma (95% confidence-intervals)

X-ray Tube

Silver anode tube with multiple primary filter feature to optimize excitation of alloys. It uses "PERFECT" detection system or "Programmable Excitation by Regulating Filter Energy Current Time).

**Measurement Unit
Weight / Dimensions**

Alloy Mode: weight %
1.4 kg (3.0 lbs). 248 x 273 x 95 mm (9.75 x 10.5 x 3.75 in)

Excitation Source

Miniature x-ray tube and power supply – Runs at 35 kV/10µA and current variable normally between 2-12 µA , 1W (tube specs: 40 kV to 38 kV/50µA, 2W maximum). Using silver anode target.

System Electronics

Hitachi SH-4 CPU with ASICS - High-speed DSP - 4096 channel MCA

Batteries

2 Rechargeable Lithium-ion battery packs with Quick-swap capability.
8-12 hour (maximum depends on platform and duty cycle), 2 hr recharge cycle.

**Display
Testing Mode**

¼ Backlit VGA touch screen LCD, visible in all conditions.
One analysis mode: **Alloy Grade** mode with chemistry in **weight percentage** (Fundamental Parameters analysis).
Standard Signature ID Store/Match Mode - Super Chem. ID Store/Match Mode
Optional modes : **Light element analysis (V, Ti <1%)**.
Precious Metals – Mining (Industrial bulk).

| | |
|---------------------------------|---|
| Data Storage | Internal : max 6000 readings with x-ray spectra. Displays stored readings any time |
| Analysis Range | ALLOY MODE: One alloy suite is to be selected at time of order Suite 1 - Standard "G Suite" of 24 Standard alloying elements from Ti(22) to Bi(83) Or Alternate "Electronic B suite of 27 alloying elements from Ti(22) to Bi(83) |
| Measurement times | Non standard in-range elements may be available (AI). Variable, user-definable. Alloy: recommended measurement time: min 10 seconds. |
| Standard Accessories | Lockable, shielded waterproof Pelican carrying case with combination lock - Shielded belt holster Spare lithium-ion battery pack with holster - 110/220 VAC battery charger/adapter One Alloy reference standard with certificate RS-232 PC interface transfer cable with NDT© (NITON Data Transfer) PC software Virtual keypad for rapid/reliable sample information entry Password protected instrument set-up. Multiple passwords available - Auto shutdown - stops producing x-rays on power failure - (3) x-rays-on indicator LED's - Two-handed safety interlock / Sample proximity sensor (activation optional in U.S.) |
| Safety Features | |
| Radiation safety | The maximum dosage to which the user is exposed when properly operating the XLt 898 is < 1 µSv/hr on the fingers of the hand holding the instrument, with shutter open. |
| Licensing / Registration | In Singapore, a user license is required to possess, use and transport the equipment on-site or keep and store in company premises. Severe penalties apply for non-compliance to Singapore regulations. Contact us for details. |
| Data entry | Via standard touch-screen, barcode scanner and/or via PC using RS-232 port and cable. |
| Downloading | Transfer data to PC via RS-232 port and supplied NITON Data Transfer (NDT) software. Easily export data to PC spreadsheets and incorporate report into MS Word processing software. |
| Remote operation | Full remote control capability via PC software and standard accessory cable connector or using optional Bluetooth feature. |
| Carrying case Housing | Unbreakable, cadmium-free, lead-free plastic waterproof case with combination lock. High-strength, dust proof/splash proof injection-molded plastic housing. |
| Shipping/Transport | May be carried, shipped or transported within Pelican carrying case. |
| Operating conditions | Temperature range 20° to 122°F (-7° to 50°C) or up to 800°F (430°C) following specific procedures. |

Summary of Niton possible models (other models also available):

| Model | Tube specs | Applications | Partial Range of elements (indicative) |
|------------------|--|---------------------|--|
| XLt-898SY | Fixed power, Multi-filter PERFECT,35-38 kV, /50 µA, 2W max | Alloy | Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Pd, Ag, Sn, Hf, Ta, W, Re, Pb and Bi. |
| XLt-898 M | Fixed power, no filter 35-40 kV, 20 µA max | Alloy and Mining | Alloy mode: same as XLt-898 Mining Ind bulk: Ti, V, Cr, Mn, Fe, Co, Ni, Cu, Zn, Zr, Nb, Mo, Pd, Ag, Sn, Hf, Ta, W, Re, Pb, Bi and Balance |

XLt-898 P

Fixed power, no filter 35-40
kV, 20 μ A max

Alloy and Precious metals

Same Alloy range as XLT-898
PM: Fe, Co, Ni, Cu, Zn, Ru,
Re, Pd, Ag, Ir, Pt and Au.
Same alloy range as XLT-898
with addition of lighter
elements: V and Ti < 1%
using filters - Aerospace

XLt-898 Y

Variable power, multi-filter,
35-40 kV, 40 μ A max

Alloy and Light elements



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