



**NEW**

A brand new generation of stationary x-ray generators built with the latest components to offer the best performances!

**MORE POWER, SMALLER, LIGHTER,  
LATEST COMPONENTS & MORE**

*Monopolar and bipolar, mobile and stationary  
from 1 to 450kV and up to 50mA*

# BALTOGRAPH

The mobile & stationary range

**CLD**

**XSD**

**XMD**

**LS1**

**TSD**

**TSC**

*The new Baltograph series is once again the evidence of the long time expertise of Balteau NDT in building reliable, powerful and safe x-ray stationary equipments used in various NDT applications and inspections.*

*When you buy an equipment from Balteau, you are certain of getting the best quality to price value and thanks to our 100 years of continuous business under the same name as an independent x-ray manufacturer, you rest assured that you'll get a continuous support all through the very long lifetime of the equipment you bought.*

*The difference between the Baltograph series and the Baltospot series is that different combinations of tubes are available with the same generator as a complete working unit is made up of several components interconnected together. This brochure is explaining you the possibilities offered by this interesting feature.*

## XSD generators - The muscles

A full X-ray equipment is made up of a generator (XSD), a control unit (LS1), a tubehead (TSD or TSC) and a cooling unit (WCU or OACU). Balteau XSD generators are 19" racks, built around a sealed, oil and gas free, solid stage voltage multiplier. SMD (surface mount devices) electronic is used to reduce maintenance time, size and weight. XSD are either monopolar or bipolar: generators are 100, 160, 225, 320, 420 and 450 kV. Powers available are 4 to 4,5 kW.

### BALTOGRAPH XSD160/4KW



High voltage range:	5 to 160 kV
Tube current range:	0,1 to 50 mA
Max. output power:	4000 W
Tubehead:	Metal-ceramic
Anode cooling type:	Water
Duty cycle:	100 %
Weight:	68 kg
Control unit:	LS1 or LS1C2

### BALTOGRAPH XSD225/4KW



High voltage range:	5 to 225 kV
Tube current range:	0,1 to 30 mA
Max. output power:	4000 W
Tubehead:	Metal-ceramic
Anode cooling type:	Water
Duty cycle:	100 %
Weight:	109 kg
Control unit:	LS1 or LS1C2

### BALTOGRAPH XSD320/4,5KW



High voltage range:	5 to 320 kV
Tube current range:	0,1 to 30 mA
Max. output power:	4500 W
Tubehead:	Metal-ceramic
Anode cooling type:	Oil
Duty cycle:	100 %
Weight:	136 kg
Control unit:	LS1 or LS1C2

### BALTOGRAPH XSD450/4,5KW



High voltage range:	5 to 450 kV
Tube current range:	0,1 to 30 mA
Beam Max. output	4500 W
Tubehead:	Metal-ceramic
Anode cooling type:	Oil
Duty cycle:	100 %
Weight:	218 kg
Control unit:	LS1 or LS1C2

## LS1 control unit - The brain

The LS1 is a large screen computer based unit providing all controls and comfort options to help the user and the production in getting the best of the inspection. LS1 are intelligent units able to display, retrieve, record all exposure related data and can also be used as a part of an entire system for controlling the X-ray device through a remote controlled connection. It includes many automatic features like the well known automatic preheating system.

LS1 also exists in a C version that can be integrated in automatic systems.

## XMD160 & 225

XMD is the mobile version of the XSD. A robust trolley has been specially designed to bring your powerful XSD to the very location of your inspections. Equipped with 2 wheels, well balanced to be easily handled by its hooks if necessary, the trolley is taking all accessories including the 3 or 4 kW closed circuit water cooling unit. No matter if you have narrow doors to pass, the width has been calculated to be kept to the minimum. XMD can be delivered as a 160 or 225 monopolar unit.

### BALTOGRAPH LS1



Measure of kV & mA:	True measure
kV step:	1 - 2 - 5 kV
mA step:	0,1 - 0,2 - 0,5 mA
Display:	TFT colour screen
memories:	10.000
Duty cycle:	100 %
Weight:	4,8 kg
Modes:	Standard, Supervisor, SAV

### BALTOGRAPH LS1C2



19" rack metallic casing

Measure of kV & mA:	True measure
kV step:	1 - 2 - 5 kV
mA step:	0,1 - 0,2 - 0,5 mA
I/O:	4 x Sub-D9
memories:	10.000
Duty cycle:	100 %
Weight:	4,8 kg
Modes:	Standard, Supervisor, SAV

### BALTOGRAPH XMD160/4KW



High voltage range:	5 to 160 kV
Tube current range:	0,1 to 50 mA
Max. Power output:	4000 W
Tubehead:	Metal-ceramic
Anode cooling type:	Water
Duty cycle:	100 %
Weight:	185 kg
Control unit:	LS1

### BALTOGRAPH XMD225/4KW



High voltage range:	5 to 225 kV
Tube current range:	0,1 to 30 mA
Max. Power output:	4000 W
Tubehead:	Metal-ceramic
Anode cooling type:	Water
Duty cycle:	100 %
Weight:	250 kg
Control unit:	LS1

## TSC or TSD tubeheads - The eyes

The tube is the ultimate and probably the most important element of your equipment. The tube will give the final characteristics in terms of output, beam and distribution. This is the reason Balteau offers a large variety of tubes. TSC series is giving Panoramic 360° beams while TSD are giving Directional beams. All our tubes may be equipped with standard bolted flanges or quick lock flanges for easy tube swap or mobile applications.

What about if you need a very specific tube? If we don't have it, we have the ability to design it for you according your own technical requirements!

### Monopolar tubeheads



Directional (TSD) or panoramic (TSC), monopolar tubes are giving the user the required flexibility for fixed or mobile installations. These tubes are made out of an insert into a shielded housing with a ceramic HV cone to connect the generator.

Inside the housing the cooling circuit is made of a serpentine tube in which the coolant fluid (water and eventual additive for cold countries) which will remove calories at the very heart of the anode. This ensures a very good and efficient protection of the anode and the target improving also the lifetime of the tube. Connections are quick connectors with direction identification.

The HV connection end can be equipped with a fixed or a quick flange allowing a quick tube change when more than one irradiation techniques are used in the same application.

### Bipolar tubeheads



When HV increases, the dielectric strength of even advanced materials is very often not sufficient to provide a good electrical insulation. This is the basic reason for building Bipolar tubes when more than 225kV is expected.

These tubes are easily recognizable by the fact that two HV ends are present with a specific Anodic and Cathodic identification. Due to the high difference of potential, the cooling media is always dielectric oil.

Balteau is also proposing a wide variety of robust and handfull stands and holders to carry these tubes that are heavy and therefore sometimes hard to handle manually. See our specialists.

Bipolar tubeheads will need a oil cooling to remove calories at the very heart of the anode and the cathode.

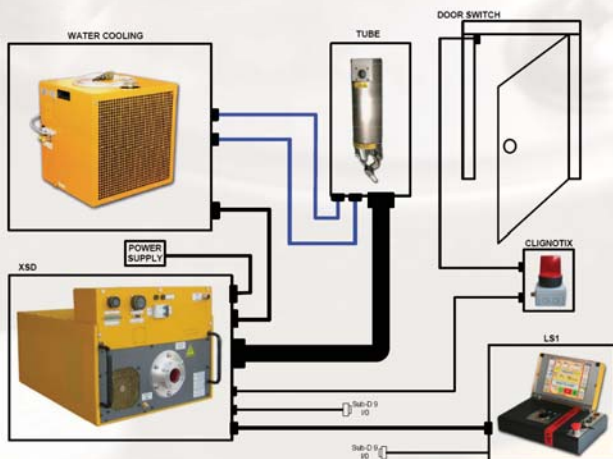
For detailed information about our range of tubeheads, please refer to the Tubes Brochure or to the flyers.

## Cables - The nerves

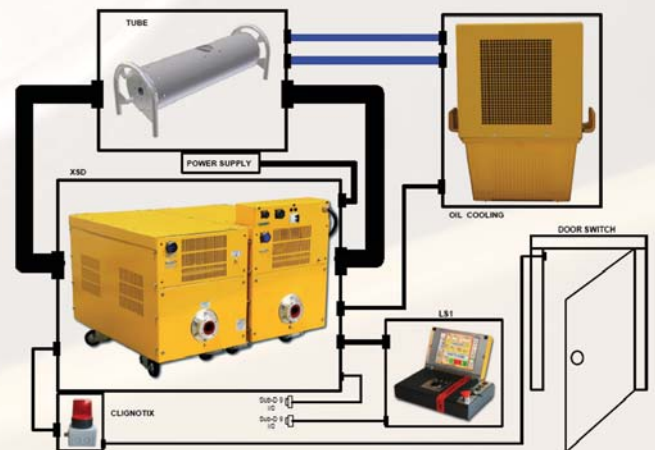
Cables are making the essentials links between elements. Their numbers have been reduced to the most to limit costs and failure possibilities. Connectors and cables are of industrial type and are selected especially for the current they drive making impossible the mixing of the cable into connectors. HV cables exist in 5, 10, 15, 20 meters or made on demand: HV cable length limits are however applying on different generators, refer to the precise brochure for more details.

## Interconnections

### Monopolar



### Bipolar





### **Balteau in words...**

Balteau is a company based and established in Belgium since 1906. The activity of the power transformers successfully turned into the x-ray business in 1932. Years after years Balteau has affirmed its leadership leading the technology and setting the foundation of modern x-ray technologies. The first company ever to reach 200, 300 and 400 kV in the past, Balteau has today brought to the industry new standards that are consciously safety oriented to allow users to operate equipment safer and easier. Balteau is also greatly caring about environment and always uses top grade and specification materials to ensure that the efficiency of the equipment will be at the top of what is technologically achievable.

On the service and spares side, Balteau is providing the buyer with an exceptional and unequalled commitment of continuous service all through the life cycle of the product.

Qualified engineers and an extensive worldwide network dedicated to serve our customers is actively participating to the success of our brand and to your possibility of always getting, from the selection of your equipment to its follow up in service, a qualified and professional support.

### **Balteau in numbers...**

Balteau has a very long established network in more than 40 countries, some of our agencies are of second generation proving they rely on the quality of our products and that they are totally committed to their business in NDT.

Balteau has produced more than 15.000 generators spread in more than 60 countries. We have 4 ranges of products and are the only manufacturer in the world to provide from Crawlers to Systems built into the same factory.

### **Balteau in names...**

Patented names and commercial brandings are:

**BALTOSPOT** (Portable and Crawlers x-ray equipment)

- LLX (Constant potential portable equipment)
- GFC (Panoramic portable equipment)
- CERAM (Pulsed frequency portable equipment)
- HAND X (Radio remote control for portable x-ray)

**BALTOGRAPH** (Stationary X-ray equipment)

- XSD (HF CP X mobile and stationary x-ray equipment – High power)
- CLD (HF CP X mobile and stationary x-ray equipment – Low power)

**BALTOSCOPE** (Radioscopic software and digital imaging)

**AIS & Systems** (Standard & custom made)

#### **Produced by**

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#### **Distributed by**