

# Y.MTIS Family TBR

## Modular Tire Inspection System for truck and bus tires



- More than 250 systems installed worldwide
- System family to fit your capacity needs
- High-contrast X-ray images (comply with ASTM F1035)
- Consistent geometric presentation on four-point bead spread, including vertical tire manipulation



The focus on tire quality has never been more intense. Pressure is on manufacturers to ensure the quality of their products. Y.MTIS, the modular tire inspection system from YXLON, meets the specific needs of the global tire industry for consistent high-quality inspection. It offers a more versatile method of testing the finished tire by applying advanced X-ray technology in real time. Manufacturers around the world have chosen Y.MTIS due to its unique inspection capability and simplicity of operation.

A variety of additional options are available off-the-shelf to fulfill diverse requirements. Y.MTIS exhibits the robust quality that can be expected from a top 24/7 industrial system. Needless to say, in the event of problems the nearest service center is never far away.

YXLON. X-ray technology at its best.



- 1 Y.MTIS Advanced
- 2 X-ray tube Y.TU100-T03
- 3 Y.MTIS Performance
- 4 Y.MTIS Performance+
- 5 X-ray detector Y.UScan 3-L
- 6 Y.MTIS Efficiency



## Configuration and Specifications

### Tire specifications

|                                 |                             |
|---------------------------------|-----------------------------|
| <b>Inner diameter</b>           | 13" – 26" (330 mm – 635 mm) |
| <b>Outer diameter</b>           | 495 mm – 1372 mm            |
| <b>Overall width</b>            | 100 mm – 508 mm             |
| <b>Bead distance (incoming)</b> | ≥ 60 mm                     |
| <b>Bead distance (spread)</b>   | ≥ 100 mm                    |
| <b>Tire weight</b>              | 0 kg – 160 kg               |

### System specifications

|                                  |                                |
|----------------------------------|--------------------------------|
| <b>Mains</b>                     | 3N PE 400 VAC +/-10%, 50/60 Hz |
| <b>Power consumption approx.</b> | 5 kW                           |
| <b>Environmental temperature</b> | 5° C – 40° C (41° F – 104° F)  |
| <b>Tire temperature</b>          | 5° C – 50° C                   |
| <b>Humidity</b>                  | < 80%, non-condensing          |

### X-ray detector (LDA) specifications

|                         |                |
|-------------------------|----------------|
| <b>Type</b>             | Y.UScan 3-L    |
| <b>Number of diodes</b> | 2469           |
| <b>Pixel pitch</b>      | 500 µm         |
| <b>Integration time</b> | typical 400 µs |
| <b>A/D-converter</b>    | 16 bit         |

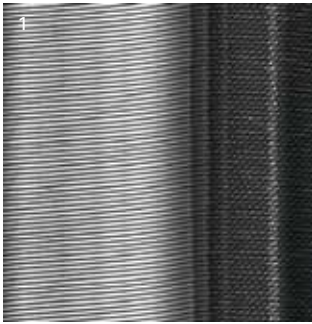
### System footprint\*

|  |                       |
|--|-----------------------|
| <b>Y.MTIS P Footprint* (H x W x D):</b>  | 2.7 m x 4.8 m x 5.1 m |
| <b>Y.MTIS P+ Footprint* (H x W x D):</b> | 2.9 m x 6.6 m x 5.6 m |
| <b>Y.MTIS A Footprint* (H x W x D):</b>  | 2.7 m x 3.7 m x 5.1 m |

\* Footprint excluding areas needed to open doors

### X-ray tube specifications

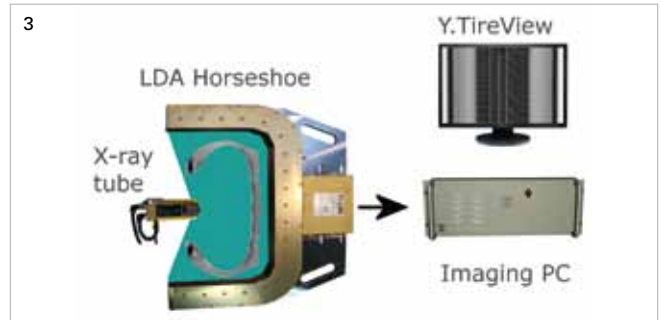
|                             |                 |
|-----------------------------|-----------------|
| <b>Type</b>                 | Y.TU100-T03     |
| <b>Power</b>                | 0 W – 300 W     |
| <b>Voltage</b>              | 5 kV – 100 kV   |
| <b>Current</b>              | 0 mA – 6 mA     |
| <b>Emission angle</b>       | 6° x 280°       |
| <b>Focal-spot size (0°)</b> | 0.5 mm x 1.5 mm |



1 X-ray image



2 Image acquisition



4 Operator console

## 200+ systems installed worldwide

The Y.MTIS family has become the standard in tire X-ray inspection with more than 200 systems installed worldwide. Continuous development and improvements keep it state of the art. It displays all the features and reliability needed at a modern tire factory. Customers all over the world have chosen YXLON.

## System family to fit your capacity needs

The Y.MTIS family is designed to provide the right throughput for your factory. There is no need to purchase a "one size fits all" system. Instead you can choose between the family members Advanced, Performance, Performance Plus and Efficiency. That way you obtain the best ratio of required performance to price.

## Four-point bead spread

The unique four-point bead spread and vertical tire rotation offered by YXLON are key factors in acquiring distortion free, symmetrical 360° X-ray images. Whether large and rigid or small and flexible, both types of tires can be tested with excellent repeatability. Tire throughput is maximized via bead-to-bead inspection.

## Operator console

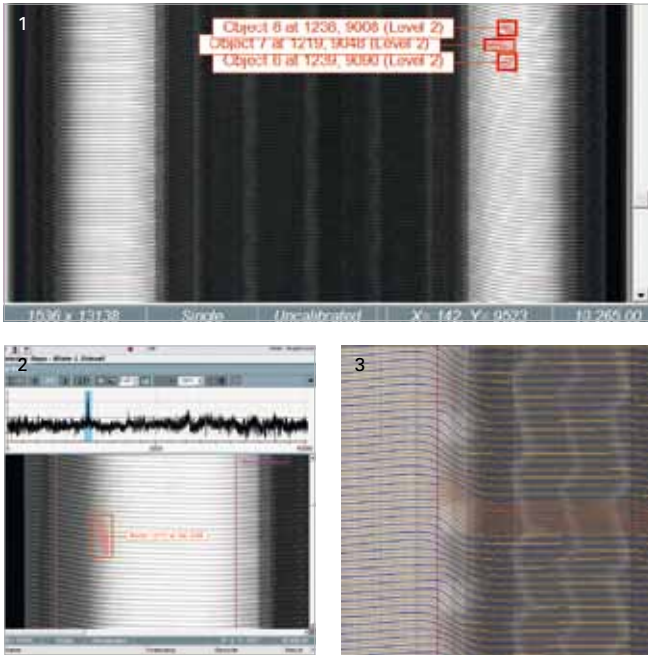
We have designed the operator console so that operators can work with the system efficiently. Industrial grade, it performs even under difficult factory conditions. The entire inspection system can be controlled from the console. Everything is visible on the various monitors and controls at a glance.

## X-ray system

The X-ray system includes the YXLON panoramic X-ray tube and detector specially developed for tire applications. The system provides a consistent geometric representation from bead to bead. System maintenance is reduced due to a unique cooling jacket designed for longest lifetime and stable operation.

## Y.TireView user interface

The software delivered with the Y.MTIS has an extensive set of features. Auto gray value scaling, the versatile zoom and custom reference lines help in everyday use. Smooth scrolling of the high-contrast tire image makes the operator's job easier and enables high-quality inspections.



- 1 Blisters
- 2 Foreign object
- 3 Cord spacing
- 4 Top marking system
- 5 Paint tanks

## Off-the-shelf options

### Y.TireAXIS™ automatic inspection

A controlled X-ray inspection process is easy to achieve using Y.TireAXIS™. No visual fatigue occurs, and the quality does not depend on assigning an expert operator. The inspection software uses the image's full information and is not restricted to the limited gray values the human eye is able to detect. With high-performance computers like these, anomalies are found no matter where, no matter when. The software can also be used to analyse the image in a semi-automatic mode, supporting the operator but not taking the final decision. Whatever the inspection mode, the key image analysis data is exported and made available for statistical process control.

### Offline PC workstations

Many activities, for instance inspection program creation or additional manual inspection, can be moved to an offline workstation. That leaves more capacity for inspection.

### MES Interface

Tires come in many sizes and tread patterns, and may have a serial number, too. The manufacturing execution system often knows each tire inside-out. Tire MES interface options allows various ways to import this information to the Y.MTIS system: from PLC controlled IT infrastructure to reading printed barcode labels. After inspection, the results and statistics can be handed back to the MES.

### Tire marking

Has this tire passed the tests? The result-marking option adds a colored dot to the tire's sidewall. Up to three different colors can be applied, for example to pass, reject or second-quality tires. A reliable pneumatic control sprays the paint dot. And if that's not enough, we offer a label-printing solution that can record a lot more information.

**YXLON**

Technology with Passion

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