

## Y.Mini-OTR Off-road tire X-ray inspection system



In the last few years, we have seen substantial demand for improved quality and reliability in the off-road tire segment of the tire industry. Capacity increases and process improvements are being made by all major manufacturers in response to these demands. As the off-road tire market evolves, the end users are concentrating on reducing down time and increasing service life of these tires to decrease operating cost and remain competitive.

X-ray testing to confirm the internal architectural integrity of tires is a widely accepted inspection method available today. The benefit to the end user is reduced downtime and extended service life from a higher quality product. YXLON's off-road tire X-ray inspection system offers superior, high resolution x-ray imaging of both bias ply and/or radial tires for reliable, precise quality assurance.

*YXLON. The reason why.*

- simultaneous bead-to-bead inspection
- solid state, high-resolution imaging system
- manual and semi-automatic inspection modes

## Tire specification

Bead diameter	min. 22.5" (571.5 mm)
Bead diameter	max. 33.5" (850.9 mm)
Outside diameter	max. 86.6" (2,200 mm)
Overall width	min. 8.6" (220 mm)
Overall width	max. 30" (762 mm)
Weight up to	max. 2,204 lbs. (1,000 kg)
Inner bead to bead distance	7.8" (200 mm)

## Operating modes

- Manual mode
- Semi-automatical mode
- Programming mode (teach-in)
- Maintenance mode

## Main system components

### ■ The moveable imaging system

enables the operator to inspect a variety of tire sizes. Designed especially for tire imaging, YXLON's solid state linear diode array (LDA) imaging system provides excellent images of steel and synthetic tire materials including fiberglass, rayon, kevlar, nylon, aramid, and polyester.



The U-shaped construction provides minimum geometric distortion resulting in exceptional images. Individual Look Up Tables (LUT) can be applied at user defined boundaries for further brightness and contrast adjustments.

This ensures superior image quality – preprogrammed for all sections of the tire and for each tire type.

### ■ Radioscopic X-ray system

The advanced imaging platform also includes the MG165



Radioscopic X-ray-system

160 kV, 40 kHz, radioscopic constant potential X-ray system for high frequency, ultra-stable output to the X-ray tube. Microprocessor-based controls feature pre-programmed X-ray generation sequences plus standby, warm up, and cooling sequences to protect the equipment.

### ■ The panoramic X-ray tube

provides 270 ° radiation coverage and consistent geometrical presentation from sidewall to sidewall. Designed for reliability and long life, the tube requires no moving parts or drives so maintenance and service requirements are minimal.

### ■ Operator's control console

The ergonomically designed operator's workstation includes the following components:

- MGC41 X-ray controller
- X-ray tube manipulator controls
- Tire manipulator controls
- Imaging system PC and SVGA viewing monitor
- 14" cabinet surveillance monitor



Operator's control console example



### ■ Remote operator controls

A pedestal-mounted human/machine interface (HMI) is located outside the lead room. This allows easy control of the manipulator movements during initial programming of the tire inspection cycles.

## System specifications

3N PE 400 VAC + 10% - 15%, 50/60 Hz	
Lead cabinet dimensions	16.4' x 13.2' x 16.4' (l x h x w) (5.0 m x 4.0 m x 5.0 m)
Temperature range	41 - 104 °F (5 - 40 °C)
Relative humidity	max. 80% at 68 °F (20 °C), non-condensing
Shipping weight	38,325 lbs. (17,384 kg)

## Compliance

YXLON International products are manufactured according to strict safety and quality standards and in compliance with the following standards:

- UVV
- EURATOM 96/29
- CE-Conformity
- German radiation law (RöV) 2002
- VDE-0100 and 0113
- 21 CFR § 1020.40 (on request)
- DIN 54113
- IEC 529
- 47 CFR § 15 (FCC)

The quality assurance system of YXLON International X-Ray GmbH is certified to ISO 9001.