



PUMPING UP EFFICIENCY IN TYRE MANUFACTURING: ACOUSTIC IMAGING CAMERAS FOR COMPRESSED AIR LEAKS

CHALLENGE

Tyre manufacturing is a complex and intricate process, consisting of multiple stages such as chemical mixing, calendaring, extruding, bead making, tyre building, and curing. These stages heavily depend on compressed air systems, which are crucial to the operation of tyre manufacturing plants. Regrettably, air, steam, and gas leaks are prevalent in tyre manufacturing process lines, where they contribute to increased expenses, energy waste, and production interruptions if left undetected.

SOLUTION

The **FLIR Si124** acoustic imaging camera, an advanced ultrasonic solution for air leak detection, finds even minor leaks effortlessly and from a distance, making inspections safer to conduct. The lightweight, portable device is easy to use with only one hand and provides real-time leak size and cost estimates using AI-driven analytics, which make determining the urgency of repair actions easy.

The addition of **FLIR Thermal Studio Suite** desktop software can help tyre companies gain a further advantage by integrating thermal and acoustic imaging in a single report. This dual functionality enhances maintenance decision-making while eliminating the need to learn multiple software platforms.

Furthermore, the complimentary **FLIR Acoustic Camera Viewer** web-based reporting software enables rapid image uploads via Wi-Fi for immediate analysis. This service provides users with valuable insights, such as the dimensions and energy costs of compressed air, enabling maintenance departments to prioritise repairs. In addition, the ingenious software generates ISO 50001-compatible reports that automatically present in-depth information on the problem and suggestion for how to proceed with repairs and maintenance.

RESULTS

Equipped with 124 microphones, the Si124 enables exceptional sensitivity and accuracy in finding even small leaks in noisy industrial settings, such as tyre manufacturing plants.



Compressed air systems are used throughout the entire tyre-making process and require regular inspections



Compressed air leak detection with FLIR Si124 acoustic imaging camera

By deploying the FLIR Si124 acoustic imaging camera, mills can locate pressurised leaks in compressed air systems up to 10 times faster than point scanning methods.

The [FLIR Si124](#) can also save tyre plants money. To estimate the potential energy a plant could save from detecting and repairing air leaks, in relation to the cost of the camera itself, the [Si124-LD ROI Calculator](#) can be used.

Additionally, the added benefits of report generation and cloud storage offered by the ultrasonic camera helps tyre companies keep records of planned repairs and maintenance work for the tyre plant machinery, ensuring cost-efficient operational continuity in the future.

The benefits of using an acoustic imaging camera for air leak detection in tyre manufacturing include the following:

- Automatically detects leaks by the sound they emit, even in loud industrial environments.
- Allows for leak detection in a wide field of view and from an extended range, thanks to its 124 microphones.
- Locates leaks up to 10 times faster than traditional methods for greater efficiency.
- Analyzes leaks in real time, utilizing the processing power of its built-in AI.
- Saves up to 20–40% of all energy used for compressed air.
- Saves inspection time and costs.
- Provides safe and easy usage in industrial settings.
- Delivers ISO 50001-compatible reporting.



FLIR Si124 Acoustic Imaging Camera



FLIR Thermal Studio Suite with the Si-Series Plugin

For more information about acoustic imaging cameras or about this application, please visit: www.flir.com/si124



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