

HEXAGON

The CALPRI C42 – A Multifunction Measurement Tool for the Rail Industry



NEXTSENSE, part of Hexagon AB, continues to lead the way in handheld rail measurement devices with the latest model in its CALPRI C4X series, the **CALPRI C42**.

This multifunction measurement tool has been developed specifically for the railway industry, meeting all national and international standards across Europe.

An All-in-One Rail Measurement Device

Designed to measure all common train wheels, brakes, rails and switches across high-speed, regional and

freight stock, the CALPRI C42 enables the combination of multiple inspection tasks in one measurement device, providing precise measurements quickly and contact-free.

For example, in the case of a train wheelset the C42 is capable of measuring the wheel profile, wheel diameter, wheel clearance and brake disk, enabling users to evaluate a complete wheelset with one device, including comparing measurements to predefined limit values. With the C42, users are able to immediately check whether the component's measurement is within a set tolerance through colour coded results shown on the device.

“The system can be configured according to each customer’s requirements,” explains Philipp Sandheigl,



NEXTSENSE's Team Leader Railway Applications. *"There are a wide variety of measurement modules to choose from. These set the measurement parameters for the sensor, which can then be guided around the wheel to gather the necessary data.*

"It's so simple to use, and our customers love that they only need one piece of equipment for almost all their measurement tasks," he continues. *"It's also really easy to upgrade the system as and when you wish to introduce other measurement parameters. Simply purchase a new module and this will be activated on your system ready for you to start measuring."*

Key Benefits

Non-contact measurement is a key benefit of the CALIPRI series. Previously, the only available measurement tools were mechanical gauges and complicated-to-use laboratory measurement equipment. These required more human interaction, therefore giving more opportunities for errors to occur.

The CALPRI series doesn't just stop at measurement either – it provides the entire workflow – removing the need for manual reporting, another step in the process where human errors can transpire.

"Before, you might have one guy using a mechanical gauge, manually configuring the settings and writing the values down on a piece of paper. He'd then perhaps head to the office, open Microsoft Excel or type his

parameters into a database," says Sandheigl.

"This is a very convoluted procedure, which provides many opportunities for error. Perhaps the wrong value was typed in, or written down incorrectly... As our system is user-independent, we remove any risk of human error affecting our results. You could repeat them 100 or 1000 times, and the measurements will always be the same."

Predictive Maintenance

As well as being used to complete inspection tasks, data gathered by the CALIPRI C42 can also support a customer's predictive wheelset maintenance via the use of the CALIPRI Predictor analysis tool, which has been developed to work hand in hand with the C42.

"We could see that customers wanted to be able to do more with the data they gathered, and so we developed a piece of software that enables them to do life-cycle analysis and predict wheel life etc," Sandheigl notes. *"This is hugely important to our customers in terms of sustainability and cost, because if you can use predictive maintenance to extend the life of your wheels, you can save a lot of money."*

A Toolbox Must-Have

Today the CALIPRI series of rail measurement tools can be found in all European national railways' maintenance facilities.

“In Europe all the national railways are using CALIPRI for their wheelset maintenance,” Sandheigl notes proudly. “Deutsche Bahn has around 250 units, SNCF has approximately 200 units, as does Trenitalia.”

“Our first markets were Austria, of course, along with Germany and Switzerland, and we’ve grown from there. It’s been wonderful to see the companies across Europe move forward with us too – upgrading to the next generation model, the C42, as it came out. They’ve chosen to stay with us, which means they are benefiting well from our solutions.”

Continuous Development

NEXTSENSE’s engineers aren’t ones to rest on their laurels, and while Sandheigl and his team are visiting potential customers and highlighting the benefits of the C42, the experts behind the scenes are already researching the next generation of the C4X series.

“It’s early days for sure, but they’re already working on a new generation device,” says Sandheigl. “This is to ensure that our customers always have the latest technological advancements available to them.”

To find out more about the **CALIPRI 42**, the **C4X series**, the **CALIPRI Predictor** or **NEXTSENSE** in general, please visit our [website](#) or [email](#) us.

The Evolution of the CALIPRI Rail Measurement Device

The company – and the idea for the CALIPRI measurement device – was created by four members of the Joanneum Research Institute in Austria back in 2006.

Whilst working on a project around laser light technology, the team was approached by the Austrian Federal Railway (ÖBB).

“They asked if this technology would be able to be used to evaluate railway vehicle wheel wear, in order to remove error-prone physical contact from the process. At that time, the most common measurement tools were mechanical gauges,” says Philipp Sandheigl, NEXTSENSE’s Team Leader Railway Applications.

“Working closely with ÖBB, the researchers developed a prototype designed specifically for railway maintenance workshops, and the principles behind this prototype can still be seen in our measurement products and solutions today.”

