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THALES 3D MR SCANNER

Water phantom for commissioning and
quality assurance of MR-Linacs



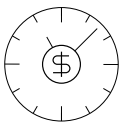
Scan here for video

Comprehensive and efficient **Commissioning and quality assurance of your MR-Linac**

A comprehensive and user-friendly system allows you to concentrate on the essentials, i.e. on measurements and not on the set-up of the measuring device.

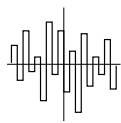
THALES 3D MR SCANNER comprises a carriage system, a water phantom, an integrated electrometer and the THALES software – all-in-one.

Save valuable time with efficient quality assurance and the intuitive operation of the THALES 3D MR SCANNER.



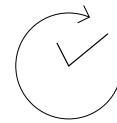
Substantial time saving

All components and work stages are thoroughly thought-out. Thanks to accelerated workflows, you gain substantial time savings.



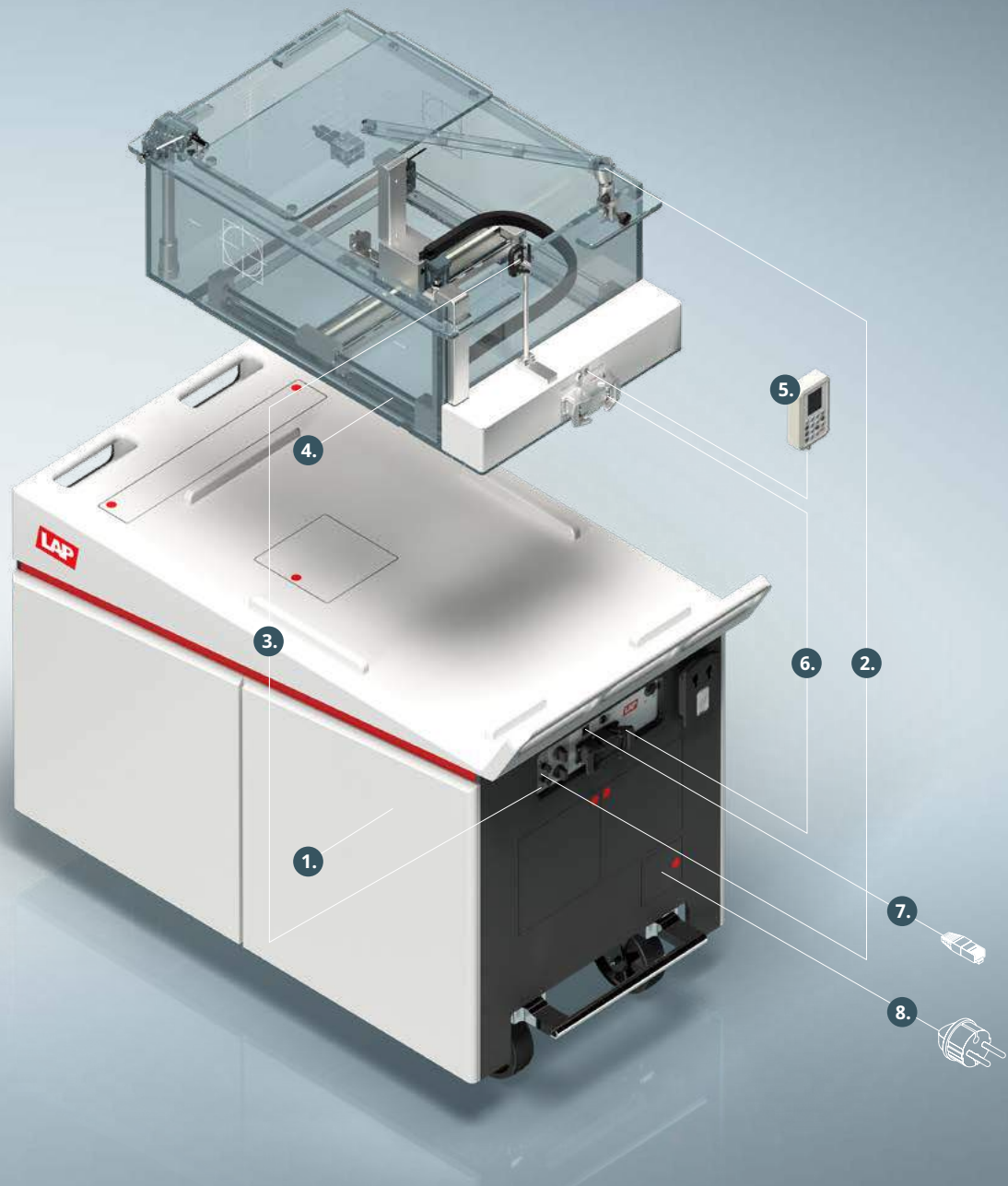
Customizable and automated

Not only can you create individual measuring plans but you can also choose from predefined ones.



Easy to use

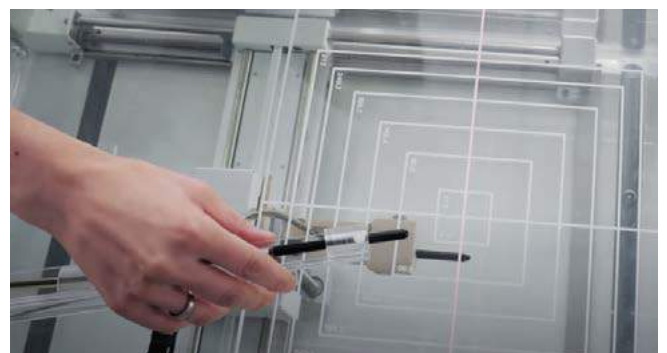
The water phantom and the THALES software can be used easily and intuitively ensuring efficient and productive workflows.



- | | |
|---|--|
| 1. Carriage system | 5. Manual control unit with connection cable |
| 2. Extension cable for the reference detector | 6. Connection cable |
| 3. Extension cable for the field detector | 7. Network cable |
| 4. Water phantom | 8. Mains power cable |



Laser-based alignment of the water phantom



Positioning of the reference detector

Ready for measurement in just 15 minutes

From set-up to measurement in just a few steps

All the cables and connections are placed conveniently in the carriage system. After connecting the system, filling the water reservoir takes only a few minutes.

You can use field detectors from different manufacturers for your measurements. Field detectors can be installed both horizontally and vertically. The integrated electrometer offers two independent channels with different bias voltages. The water level sensor allows the field detector

to be set up correctly. This ensures measurement accuracy. The reference detector is positioned with the help of the positioning plate. The phantom can then be moved into the MR-Linac. The process for the automatic orientation of the Central Axis (CAX) completes the setup.

The THALES software offers you multiple options for commissioning your MR-Linac as well as for regular quality assurance.

Independent

THALES 3D MR SCANNER was developed by LAP in collaboration with MR-Linac users and is a manufacturer-independent measurement tool for quality assurance. Different MR-compatible detectors can be used.

All-in-one

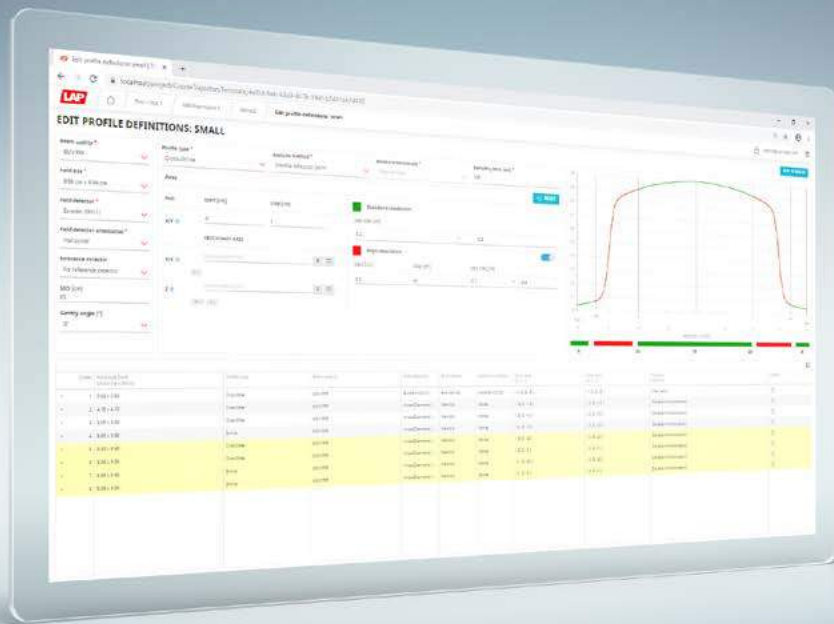
Integration of all workflows, from setup to data verification and storage, simplifies the comprehensive clinical tasks.

Precise

Selected hardware and software components ensure measurement system stability and accuracy, which significantly surpasses standard requirements.

Approved

THALES 3D MR SCANNER has successfully passed the European CE conformity assessment procedure and is cleared in the USA under 510(k) K200907.



Workspace for trajectories

User-friendly, well-structured
and efficient

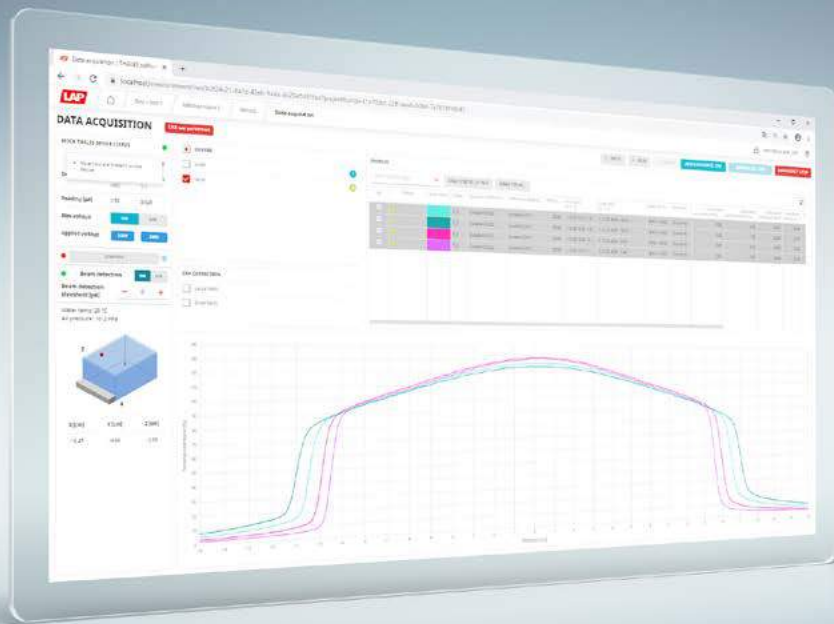
The THALES software provides high flexibility and portability

Both integration into the clinic network and the direct connection to the phantom are possible.

No additional tools required for the acquisition of data, administration, or evaluation. The data archive has an intelligent search function allowing you to find measurement sequences and

generate individual reports. Organize user profiles, MR-Linacs and additional phantoms easily and quickly.

The THALES software is web-based and optimized for Mozilla Firefox and Google Chrome browsers.



Workspace for measurements

Project structure

Thanks to its structure, the THALES software allows users to organize their work in a flexible and coherent way: with project definition, queuing and individual trajectories.

Trajectory generation

The software generates trajectories with minimum interactions, pre-defined target profiles and PDD with recommended scan regions.

Analysis

The software provides special beam analysis methods for large and small field sizes which are used in FFF mode for both transversal and inline measurements.

Configuration

All system parameters are configured centrally, including phantom, electrometer and detector settings. System users, software licenses and backups are also efficiently managed in the THALES software.

Setup with CAX measurement

The software recommends an automatic CAX measurement which combines the diagonal and inline profiles in two different depths with a suggested correction shift.

Filter options

Users have the option of working with acquired data and filter it by various parameters such as profile type, detectors, acquisition date and many others.



Data explorer and analysis screen

Beam model validation

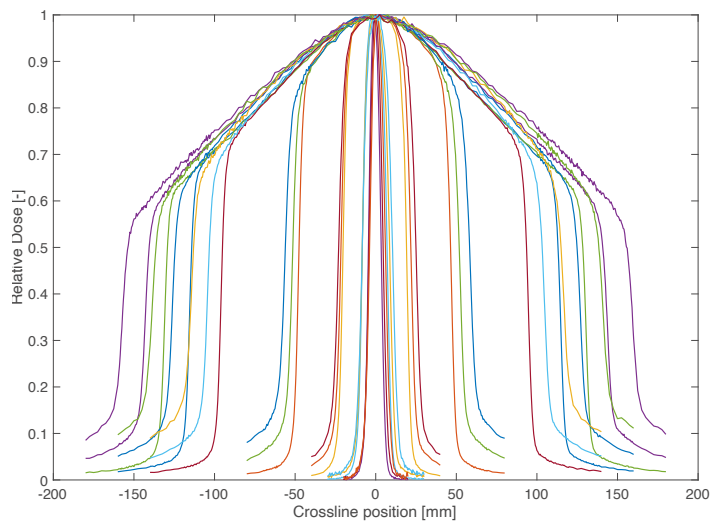
The challenge lies in ensuring highest safety levels for both patients and staff, while maximizing the time for clinical use.

The more intuitive and automated the water phantom's operation is, the more time is available for precise measuring routines and patient treatment.

For this purpose, a comprehensive set of radiotherapy data must be col-

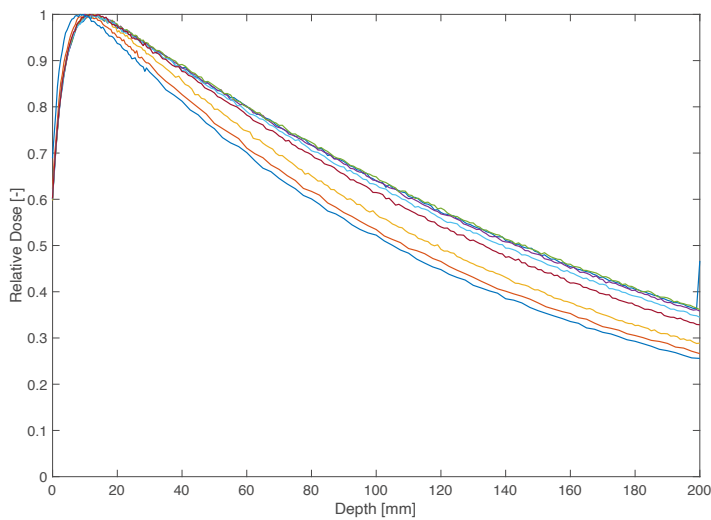
lected. With THALES 3D MR SCANNER you can acquire data reliably and perform your validation. For example, compare your measured data with the ones from the Treatment Planning System (TPS).

The THALES software provides comprehensive analysis and comparison tools for the verification of your data.



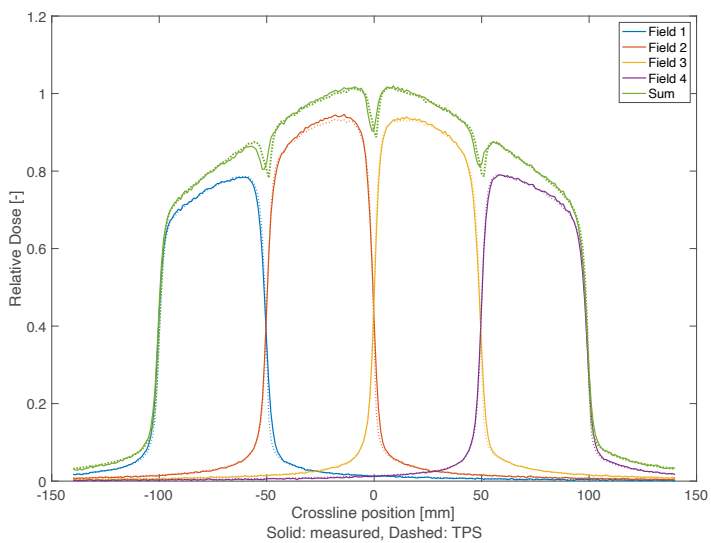
Profiles

Typical crossline measurements for various open fields from 8 mm × 8 mm up to 27 cm × 24 cm, for three different depths at a given SSD of 85 cm



Percentage Depth Dose

Typical Percentage Depth Dose (PDD) measurements for various applied field sizes ranging from 8 mm × 8 mm up to 27 cm × 24 cm



Off-axis fields

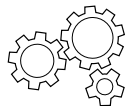
Comparison between measured data and TPS for the delivered off-axis-fields. This measurement is performed to evaluate the accuracy of the MLC calibration.

"In 2016, Europe's first MRIdian from Viewray was installed at the University Medical Centre Amsterdam UMC. The second installation followed a year later and both systems have been upgraded several times since then. During that time, I had the opportunity to test THALES extensively gaining valuable data for beam validation."

Daan Hoffmans

Physicist, Radiation therapy Amsterdam UMC

Other services



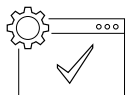
Annual maintenance

Our service team performs a yearly maintenance of your THALES 3D MR SCANNER. All technical parameters are thoroughly checked so that you can always count on the reliable operation of your system.



Extended warranty

In case of repair or replacement of components, no costs are incurred.



Regular software updates

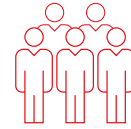
The THALES software is regularly updated. Alongside useful features for your measurements, further browser and web optimizations are carried out.

About us

LAP is one of the world's leading suppliers of systems that increase quality and efficiency through laser projection, laser measurement, and other processes. Every year, LAP supplies 15,000 units to customers in industries as diverse as radiation therapy, steel production, and composite processing. LAP employs 300 people at locations in Europe, America and Asia.



90+
Partners



300
Employees



8
Locations



Quality

We work to uniform standards and with certified processes. For us, „Made in Germany“ means the highest precision in manufacture and quality inspection of each individual device. For our customers, this means planning and process certainty.

All locations around the world use a quality management system to EN ISO 13485 or EN ISO 9001. Our products have all the necessary approvals and registrations almost everywhere in the world.



Service

We ensure maximum availability of your equipment so you can concentrate on your core process. Wherever you need us, our certified service technicians are quickly on site in any time zone. We support you from installation and commissioning, through user training, up to maintenance, repair or unit replacement.

Our efficient logistics ensure fast availability of spare parts worldwide. For technical questions and support, our helpdesk is at your disposal by telephone, via e-mail or remote diagnosis.



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in LAP Laser

▶ [laplaser](https://www.youtube.com/channel/UCp1m1v1v1v1v1v1v1v1v1v1)

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