

MOVING LASER SYSTEMS IN RT

ESSENTIAL FOR PRECISE PATIENT ALIGNMENT

EN



NEXT GENERATION





LAP IS YOUR IDEAL PARTNER FOR YOUR EXTERNAL LASER SYSTEMS

OUR MOVING LASER SYSTEMS ARE RECOMMENDED BY LEADING CT SCANNER VENDORS.

The characteristic features of LAP laser systems are sophisticated technology, quality and design for more than 30 years. This level of excellence has made us the global market leader for patient alignment in radiation therapy.

Precise patient marking, accurate planning and exact positioning are key factors for a successful treatment. Patient marking takes place during CT based virtual simulation and is required for reproducible treatment positioning on the LINAC.

Our DORADO & DORADOnova laser systems together with the LAP laser control support this crucial and important marking process and conform to your department's workflow. e.g.:

- Marking on appropriate anatomical location
- Reference point marking
- Final isocenter marking
- Field marking

Offering various configurations and mounting options the DORADO & DORADOnova laser systems are perfectly suited to meet any and all room requirements.

CT / PET-CT IMAGING IN RADIATION THERAPY

THE SUCCESS OF RADIATION THERAPY IS CLOSELY RELATED TO THE ABILITY TO ACCURATELY DEFINE, PLAN AND DELIVER RADIATION TREATMENT TO THE TUMOR, WHILE LIMITING THE DOSE TO NORMAL TISSUE.

Increased accuracy results in improved tumor control rates and a reduction in treatment-related toxicities with improved quality of life for cancer patients. Advances in imaging technologies support improved treatment and the development of new techniques.

Computed tomography (CT) scans acquired in the treatment position before the start of radiation therapy remain the basic imaging modality for contouring tumor target volumes and defining dose-limiting normal body structures known as „organs at risk“. For precise dose calculation with a treatment planning system a CT scan is necessary. In the case of lung, esophageal cancer and head and neck cancer, it could be shown that the target volume can be better delineated by means of a PET image fusion with the planning CT.

The treatment isocenter location is identified based on target volumes and treatment area. Once the isocenter is determined or „marked“, this coordinate is part of the treatment plan and can be used as a reference location in subsequent dose calculations.

For the patient marking, external laser systems are essential: A set of localization marks on the skin of the patient is necessary so that the patient can be accurately repositioned on the LINAC. Placement of localization marks can be carried out using different scenarios, taking into account the individual workflow of the clinics and the time requirements for different machines (CT versus LINAC). A well-designed treatment preparation results in all these steps being seamlessly interrelated and the duration of the entire process being relatively short.

OUR SYSTEMS AT A GLANCE

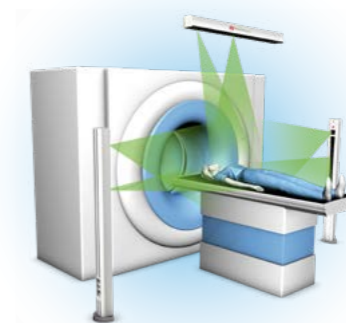


BASIC SOLUTION

LAP LASER DORADOnova 1*

1 movable laser line for sagittal plane

Transverse and coronal plane adaption require CT couch movement.

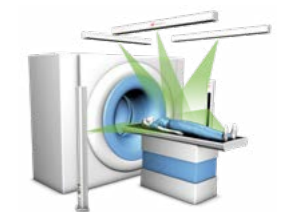


GOLD STANDARD

LAP LASER DORADOnova 3*

3 movable laser lines for sagittal and coronal plane

Transverse plane adaption requires CT couch movement.

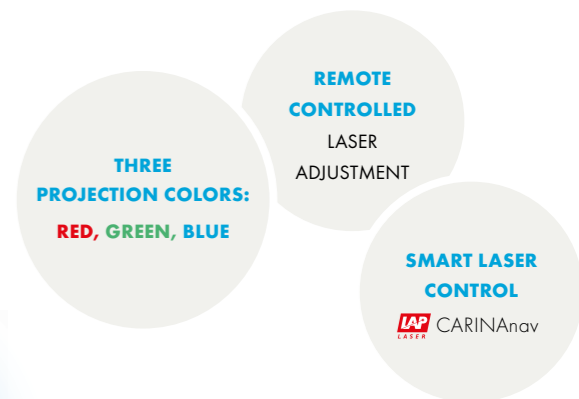


ADVANCED SYSTEM

LAP LASER DORADOnova 5

5 movable laser lines for sagittal, coronal and transverse plane

No CT couch movement necessary.



For further technical details please refer to the corresponding data sheets.
* Also available as DORADO 1 or DORADO 3: manually adjustable and red laser color only.

CHOOSING LAP'S MOVING LASER SYSTEMS IN RT INCLUDE ...

... SAFETY FIRST

HIGH RELIABILITY & PERFECT PERFORMANCE

All our moving laser systems together with the laser control are certified medical devices, which are developed and manufactured according to EN ISO 13485 and are of course RoHS and REACH compliant.

All components used are standard-compliant and conform to the specifications for a medical device.

Regular training on the latest regulatory requirements and state-of-the-art technologies ensure that our developers and engineers are up to date. This in turn guarantees that you can safely use our products within their life cycle.

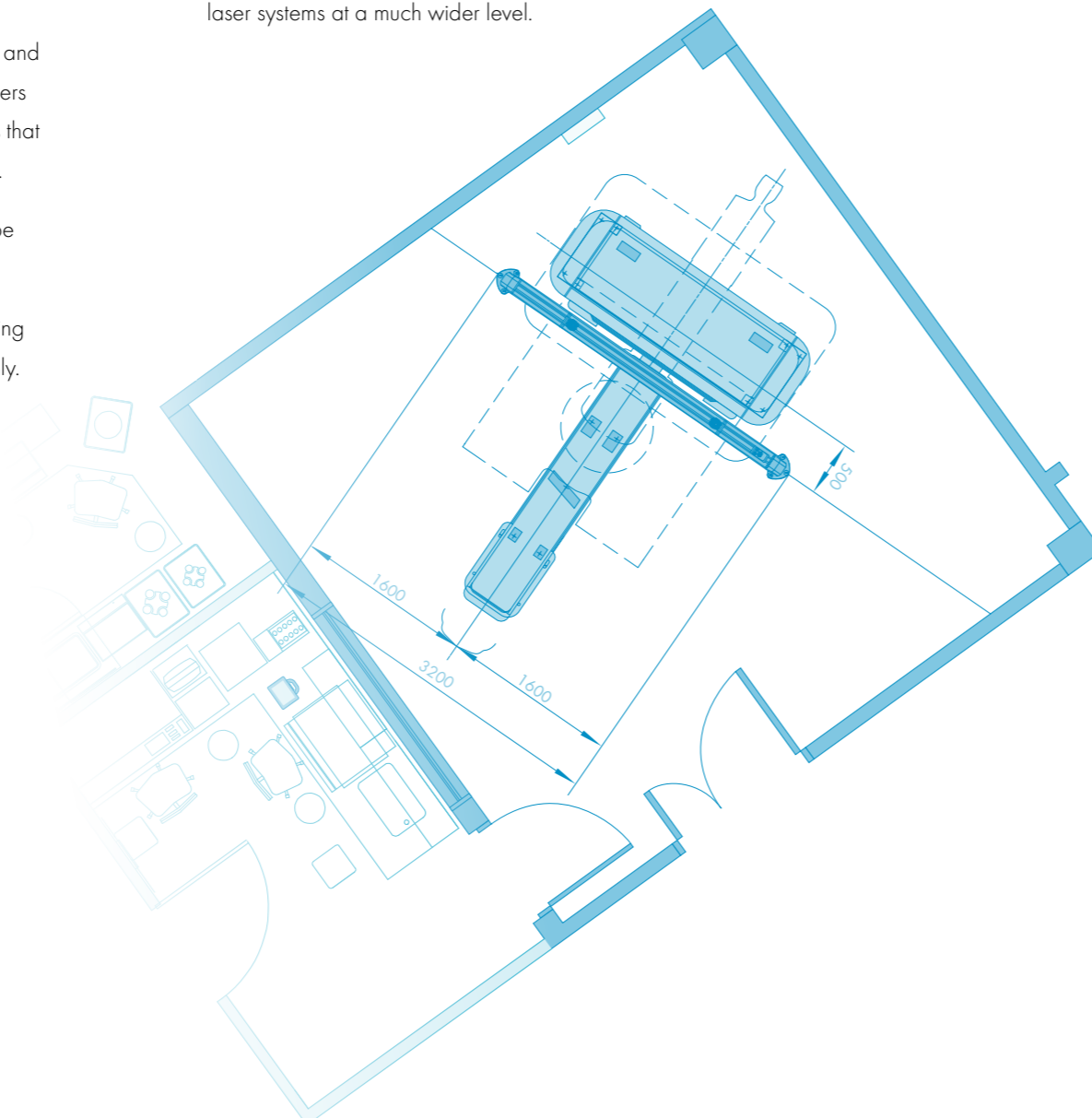
To ensure successful operation all laser systems will be submitted to a strict quality control before shipping.

Installation, final acceptance testing and commissioning will be done by LAP authorized service engineers only.

... ROOM PLANNING

OUR PRE-INSTALLATION SERVICE

No radiation therapy facility set up is alike. LAP always integrates room planning into each CT / PET-CT project. With the same care with which we develop innovative products, we support you with a professional room planning service. We take your individual room situation into account and thus ensure the accuracy and safety of our moving laser systems at a much wider level.



... ACCURACY AND PRECISION

IN PATIENT MARKING AND ALIGNMENT

Modern treatment techniques require precision in every stage of the entire treatment chain, beginning with precise and reproducible patient positioning with the help of a dedicated external laser system.

Integrated in a superior housing our laser systems combine advanced optics, high precision mechanics and state-of-the-art electronics to ensure the highest level of stability and reliability. With the support of LAP's moving laser systems accurate and precise anatomical patient position is guaranteed. Laser system and CT scanner form a reliable unit.

BY THE WAY ...

The unique haptic and visual character convince in the well-designed rooms and has been honored with the German Design Award in the category "Medical, Rehabilitation and Health Care".

"THE CLEANLY AND PRECISELY DESIGNED LASER SYSTEM HAS A FASCINATING DESIGN ORIENTATED TO FUNCTIONALITY AND GOOD OPERABILITY THAT SIMULTANEOUSLY EMBODIES PROGRESSIVE MEDICINE"

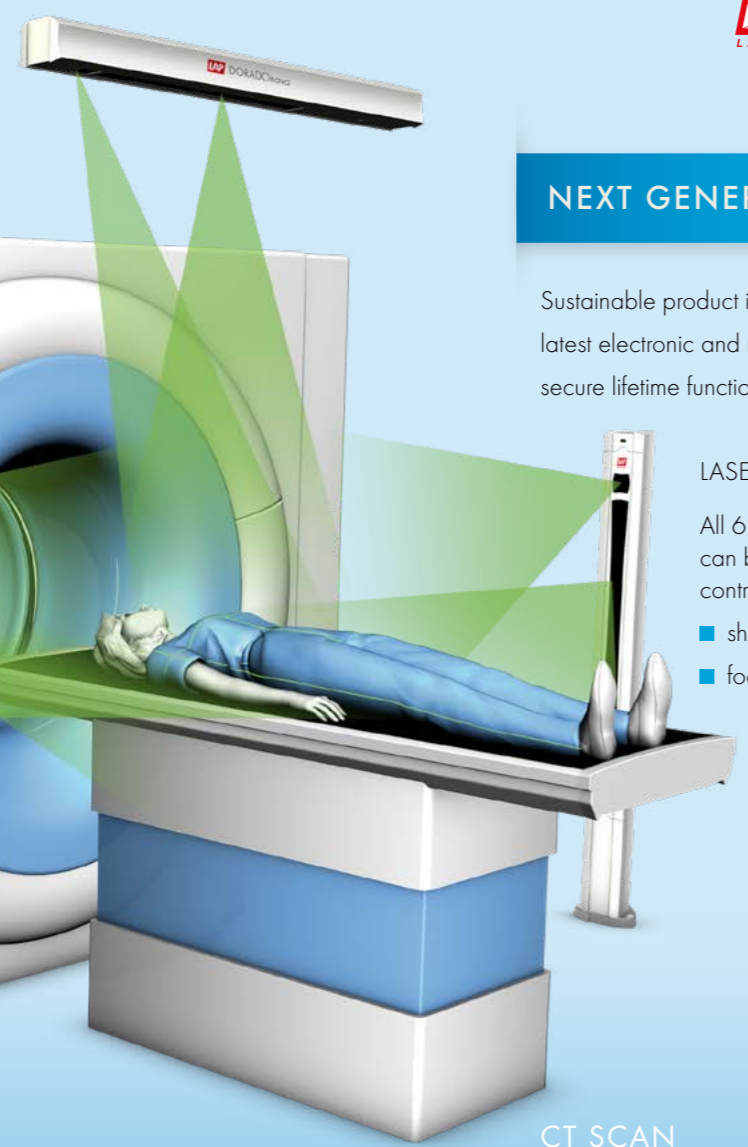
STATEMENT OF THE GERMAN DESIGN AWARD JURY



LAP'S FIRST CLASS LASER TECHNOLOGY ...

... IS ESSENTIAL TO SUPPORT PATIENT MARKING AND ALIGNMENT IN YOUR TREATMENT CHAIN

- ULTRA FINE LINES
- FAIL SAFE SYSTEM
- COMPREHENSIVE TRAVEL RANGE



GOLD STANDARD
LAP LASER DORADOnova 3*

NEXT GENERATION

Sustainable product improvements like latest electronic and mechanical components secure lifetime function & service.

LASER ADJUSTMENT
 All 6 degrees of freedom can be adjusted via remote control

- shift, tilt, rotation
- focus



CT SCAN
 Patient positioning and marking with external laser system in treatment position

SMART LASER CONTROL
LAP LASER CARINAnav

CARINAnav SUPPORTS YOUR INDIVIDUAL WORKFLOW

Start without patient data: just move the lasers with your fingertip or type in coordinates. Or open a planning data set and select the positions from a table. You may anytime override the data set and move the lasers manually or by entering coordinates.

- MODE SELECTION**
- ➔ *clinical mode* – you handle patient data and laser position
 - ➔ *service mode* – you can align the laser axes to the machine's virtual isocenter for validation



- SUPPORTED DATA INTERFACES**
- LAP file format
 - DICOM isocenter import
 - syngo.via RT Image Suite

OPTIONAL: MR SCAN & IMAGE FUSION
 For contouring the target volume and identifying organs at risk

TREATMENT PLANNING
 For precise and successful patient irradiation

TREATMENT
 Patient positioning with external lasers

*For more configurations, mounting versions and further technical details please refer to the corresponding data sheets.



TECHNICAL DATA

	LAP LASER DORADOnova
Laser color (typical wavelength)	red (638 nm), green (520 nm), blue (450 nm)
Laser class	2
Laser adjustment	Remote controlled
Line width up to 4 m distance	< 0.5 mm (blue), < 1 mm (red, green)
Line length at 3 m distance	3 m
Positioning accuracy	± 0.1 mm
Projection precision	± 0.5 mm at a projection distance of 4 m
Travel range	700 mm
Travel speed	up to 200 mm/s
Power supply	100 ... 240 V AC
Bridge mounting	Width (customized) 2594–5000 mm (102.1"–196.9") Height (customized) 2300–2800 mm (96.6"–110.2")
Dimensions	Depending of mounting version, please refer our data sheets
Scope of delivery	Laser system, remote control, Wilke phantom, cable set



WILKE PHANTOM

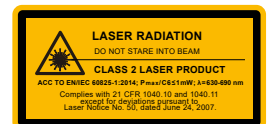
THE PHANTOM SERVES TO CHECK ...

- ➔ whether the laser lines run parallel to each axis
- ➔ whether the laser lines are precisely aligned with the isocenter of the CT
- ➔ whether the laser plane is coplanar with the image field of the CT

Quick and simple set up

Easy to use, transport and store

For further technical details and more information regarding our DORADO and DORADOnova systems please refer to the corresponding data sheets.



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