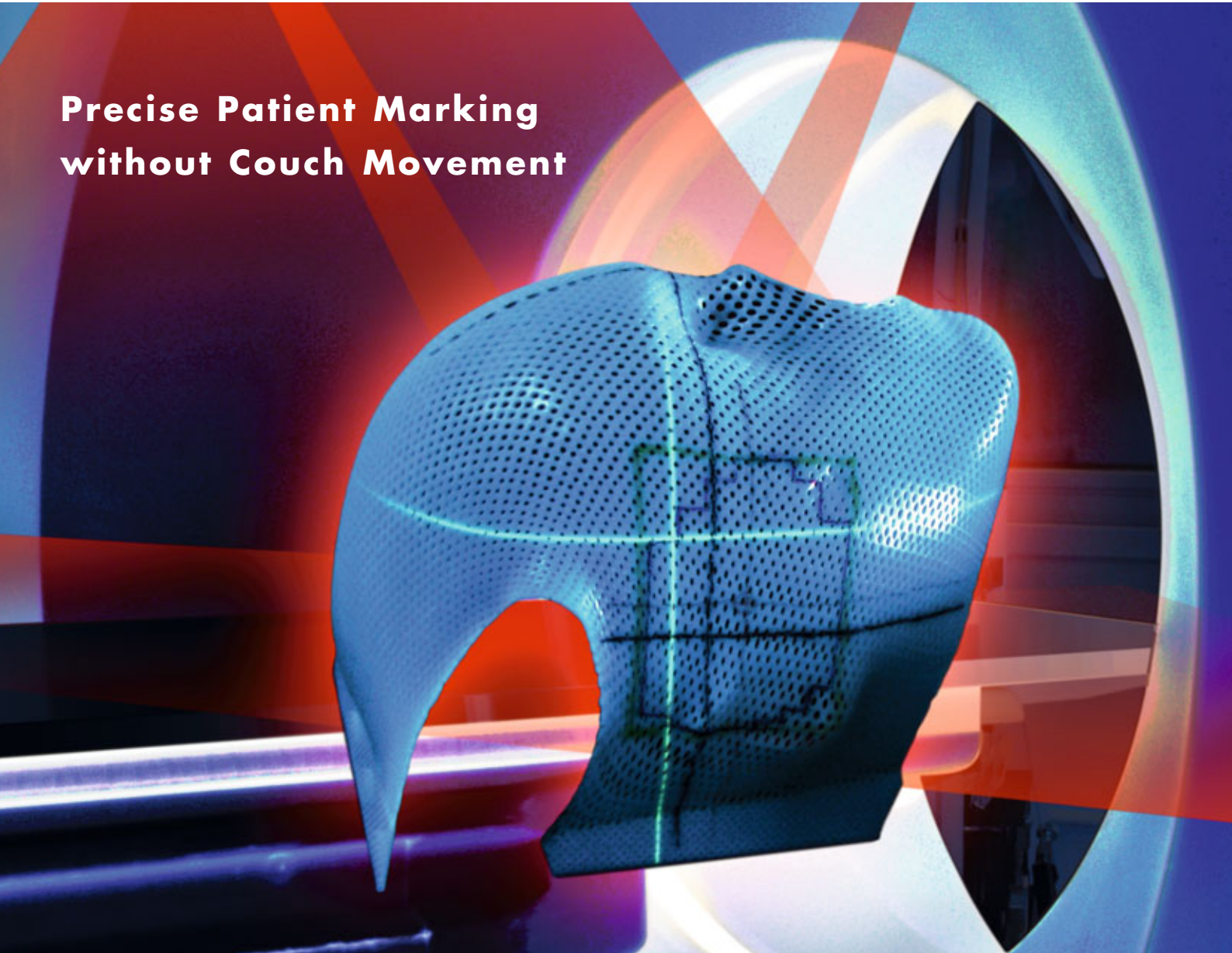
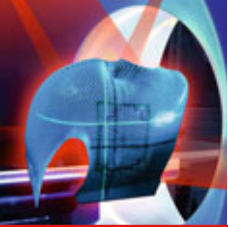


DORADO 4 PLUS

LASER SYSTEMS FOR SIMULATION

**Precise Patient Marking
without Couch Movement**





DORADO 4 PLUS LASER SYSTEMS FOR SIMULATION CT, PET-CT, MRI, SPECT

MULTIMODALITY SIMULATION

Multimodality Simulation is the most accurate process available to localize, define, and reconstruct a patient's tumor in 3 dimensions. Three dimensional radiation therapy (3DRT) as the most up to date treatment method in Radiation Oncology requires, that optimal target localization is achieved, especially in Intensity Modulated Radiation Therapy (IMRT).

Vital to the process of virtual simulation is the imaging device with a flat table top and the RT Planning software with virtual simulation option, interfaced to the precision marking system with moving lasers.

A modern CT scanner can delineate target volumes and organs at risk with high precision. The capabilities of the scanner are enhanced, when a DORADO laser marking system is part of the scanner configuration. This laser system projects and marks the correct treatment set-up directly on the patient's skin, eliminating the need of a conventional simulator.

The treatment plans are automatically transferred via computer network to the DORADO system, to be projected on the patient's skin. Precision marking enables the Radiation Therapist to reproduce the treatment set-up each day with a high degree of accuracy.

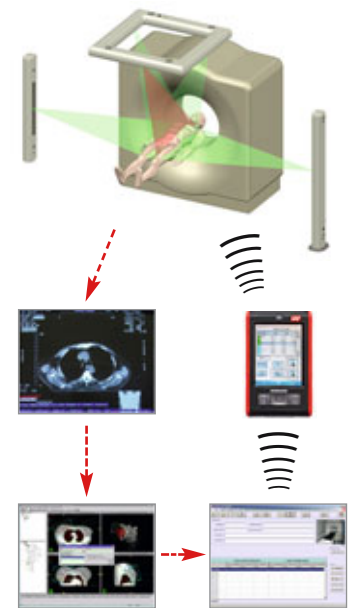
VIRTUAL SIMULATION PROCESS

The DORADO Simulation Laser system plays a pivotal role in your 3D Multimodality Simulation process.

The isocenter coordinate information and the field intersection points with the skin are automatically transferred via your Ethernet network to the DORADO Laser system. High precision DORADO Simulation Laser rails project the coordinates on to the patient's skin with sub millimeter accuracy.

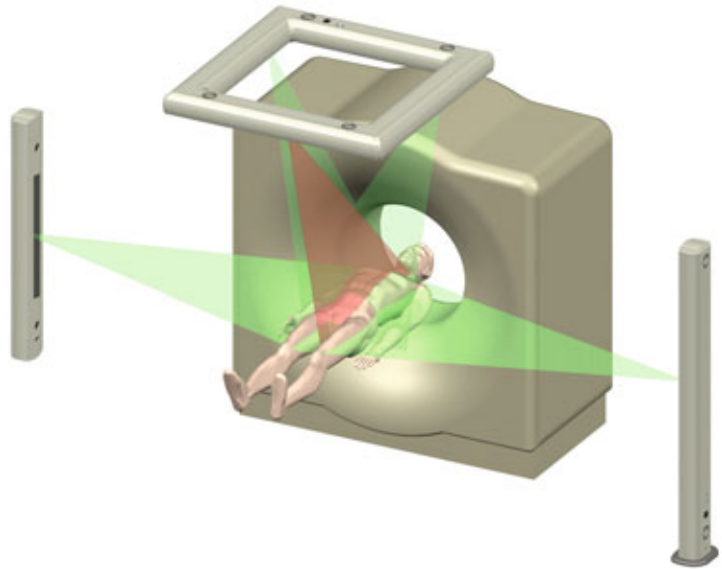
The LAP IsoMark software makes patient marking simple and failsafe. Only after prescribed positions are reached will the lasers turn on. Real time display of each lasers true position is feedback to the IsoMark Software to ensure accurate precise marking every time.

In the Imaging room (CT, MR...), the movement of the Laser lines to the prescribed position is controlled by the NAVIGATOR.



DORADO 4 PLUS: **NO COUCH MOVEMENT**

The DORADO 4 PLUS System consists of 5 moving Lasers: a single overhead moving laser line to project the sagittal plane, two moving overhead lasers to project the transversal plane and two moving lateral lasers to project the coronal plane. Operating the Lasers only, not the couch, makes sure that the applied dimensions, directions, angles and shifts are automatically correct. The automatic marking procedure reduces operator training and virtually eliminates time consuming and potential error prone manual processes, in particular the need for manual couch movements.



FIELD MARKING APPLICATION

Four moving Laser lines enable to project line intersections at any skin location. Not only Isocenter but as well field corners and even Multileaf contours provided from the Planning System can be projected sequentially onto the skin. Using the DORADO NAVIGATOR, this is a fast and comfortable non time consuming process.

BRACHYTHERAPY APPLICATION

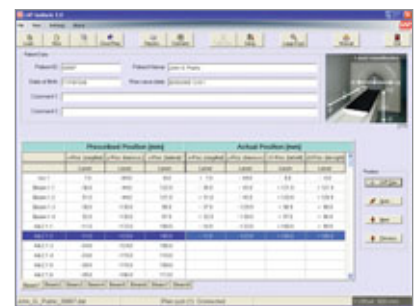
The DORADO 4 PLUS is the perfect tool to mark the Entry and Exit points of the brachytherapy needle. The intersection points with the skin are determined by the Brachy- Planning or the Brachy-Virtual Simulation Software and transferred via computer network to the DORADO 4 PLUS CT4 computer, in order to be projected onto the patient's skin.

DOSIMETER MARKING

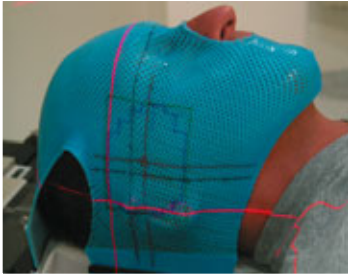
Dosimeters for the daily QA can be placed more precise and reproducible, using skin marks (tattoos) for the measurement points. The coordinates for these marks are determined from the Planning System and marked with the DORADO 4 PLUS marking system.

ISOMARK SOFTWARE

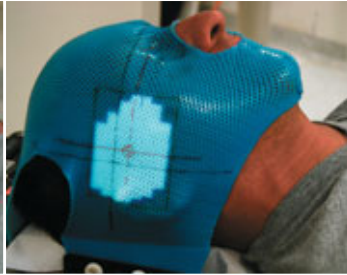
LAP IsoMark Software for Connectivity to all major RTP and CTsim Systems.



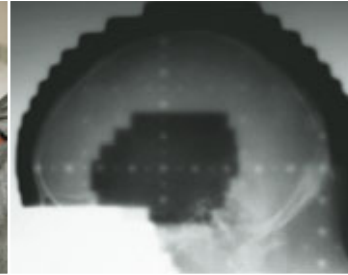
FIELD MARKING



Marking of the MLC field contours with the DORADO 4 PLUS (CT-4) Laser system



Verification of the Field with the Linac Light Field Projector



Verification of the Field with the Portal Imager

FEATURES AND BENEFITS

- No couch movement
- Optimized Integrated workflow
- Five lasers – four moving lines
- User friendly and self guided Software

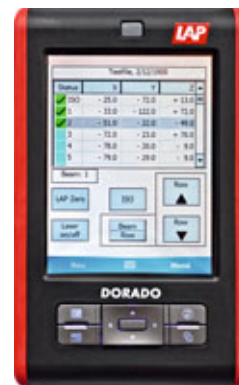
- Interface to all major RTP Systems
- Programmed Laser Movements
- Independent Laser Position Control
- Autocalibration
- Red and green laser lines

- Field Marking option
- Brachytherapy Option
- Verification of Patient Position

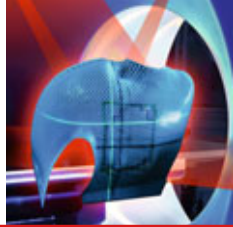
NAVIGATOR

The DORADO NAVIGATOR gives you full control over your DORADO Simulation Laser System with the added ease of a wireless handheld Bluetooth device.

All patient data are transferred to the handheld device allowing the user to perform patient specific marking functions from within inside the room.



SPECIFICATIONS



LASER MOVING SYSTEM

Moving distance	600 mm
Moving speed	200 mm/sec
Selectable speeds	0.3-180 mm/sec
Positioning accuracy	± 0.25 mm
Projection accuracy	± 0.5 mm at 4 m/13 ft
Line length at 3 m/10 ft	6 m/20 ft (red), 2,7 m/9 ft (green)
Feedback control	absolute linear encoder
Calibration	auto calibrating
On-board function processing	microprocessor
Power supply	110-230 VAC
Computer interface	RS 485
Computer/laser distance	unlimited
Isomark software	PC with Windows 2000/XP
Simulation data download	1-5 networks sequently
Dimensions (LxWxD)	wall mount 1392x184x165 mm floor mount 1796x184x127 mm

LASER MODULE

Laser type (red)	Laser diode
Wave length	635 nm
Laser type (green)	DPSS
Wave length	532 nm
Output power	< 1 mW
Laser class	class II
Line width	(focusable) < 1 mm
Drift	not measureable

NAVIGATOR

Rugged Handheld with integrated Bluetooth and WLAN
Operating System: Microsoft Windows Mobile 5.0 Premium Edition
Display: 3.5 inch, 480 x 640 pixel, 65.536 colors, transfective TFT touchscreen, LED backlight
Dimensions (HxWxD): 121 x 76 x 17,5 mm
Weight (g): ca. 200 g
Docking station included



LAP patient alignment systems comply with Center of Devices and Radiological Health regulation for class II lasers (21 CFR 1040).





LAP LASERS AROUND THE WORLD

Aalborg • Aarhus • Akron • Albany • Albuquerque • Alpharetta • Altoona • Amarillo • Amsterdam • Amhem • Athens • Atlanta • Aurora • Austin • Bakersfield • Baltimore • Bangkok • Barrington • Baton Rouge • Beijing • Belleville • Benevento • Berlin • Bethesda • Binghamton • Bismarck • Boca Raton • Boise • Boras • Boyton Beach • Bradenton • Brandon • Braunschweig • Bremerton • Brick • Brooklyn • Brownstown • Bucharest • Buffalo • Caceres • Caen • Calgary • Campinas • Canton • Casper • Catania • Causeway Bay • Charleston • Channahon • Chester • Chicago • Chicoutimi • Christiansand • Chula Vista • Cincinnati • Clearwater • Cleveland • Coalinga • Coeur d'Alene • Colorado Springs • Columbus • Comac • Concord • Coon Rapids • Covington • Covington • Denver • Detroit • Des Moines • Duquesne • Dubois • Duesseldorf • Elizabeth • Elizabeth • Englewood • Escondido • Fayetteville • Flint • Fort Lauderdale • Fort Walton Beach • Ft. Wayne • Galveston • Genoa • Greenville • Greenville • Guam • Halifax • Hanover • Hartford • Hattiesburg • Highland Heights • Honolulu • Houston • Huntsville • Indianapolis • Jacksonville • Joliet • Knoxville • Köln • Kuaohang • La Mesa • Lafayette • Lake Charles • Lakeview • Lancaster • Las Vegas • Lebanon • Leipzig • Lincoln • Littleton • Long Beach • Los Alamitos • Los Angeles • Louisville • Lubbock • Lubbock • Lumberton • Madison • Maitland • Maidstone • Malone • Manassas • Mansfield • Mantova • Marshfield • Mason • Medford • Melbourne • Memphis • Merced • Meridian • Metairie • Middleburg • Midwest • Milwaukee • Minot • Missoula • Montclair • Montgomery • Mountain Home • Muenster • Münster • N. Grafton • Nashville • New Albany • New Port Richey • New York • Newcastle • Nijmegen • Niles • Norfolk • Ocala • Odense • Oklahoma City • Ontario • Opelika • Orange • Orange City • Orangeville • Ormond Beach • Oshtemo • Palmdale • Palos Heights • Panama City • Park Ridge • Pasadena • Philadelphia • Phoenixville • Pine Bluff • Pittsburgh • Portland • Pretoria • Providence • Queens • Quincy • Redbank • Redlands • Ridgewood • Rio de Janeiro • Sacramento • Rolla • Roma • Rotterdam • St. Louis • Sacramento • Salem • San Antonio • San Francisco • San Juan • San Luis Abispo • Savannah • Scottsbluff • Scottsdale • Searcy • Shantou • Shelby • Sherbrooke • Sheridan • Shreveport • Sydney • Springfield • Springfield • St. Joseph • St. Louis • St. Nazaire • St. Petersburg • Stanlake • Staten Island • Stuart • Stuttgart • Sulfur • Sun City • Taipei • Tampa • Terrell • Thomasville • Thornton • Tokyo • Toms River • Topeka • Trois Rivieres • Trumbull • Tucson • Tulsa • Tupelo • Tuscaloosa • Valencia • Valhalla • Vancouver • Vaxjo • Vero Beach • Victoria • Vienna • Vigo • Vorhees • Walcheren • Washington • Waterbury • Watertown • Waukegan • Waussau • West Chester • Wichita • Wichita Falls • Wilkes-Barre • Willingsboro • Wilrijk • Winnipeg • Winston-Salem • Wooster • Yakima • Yuba City • Yuma • Zion

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