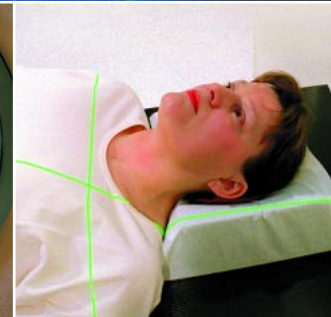
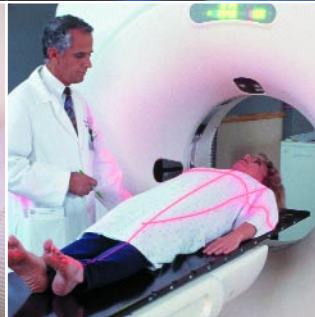
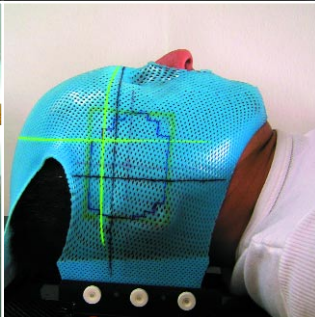
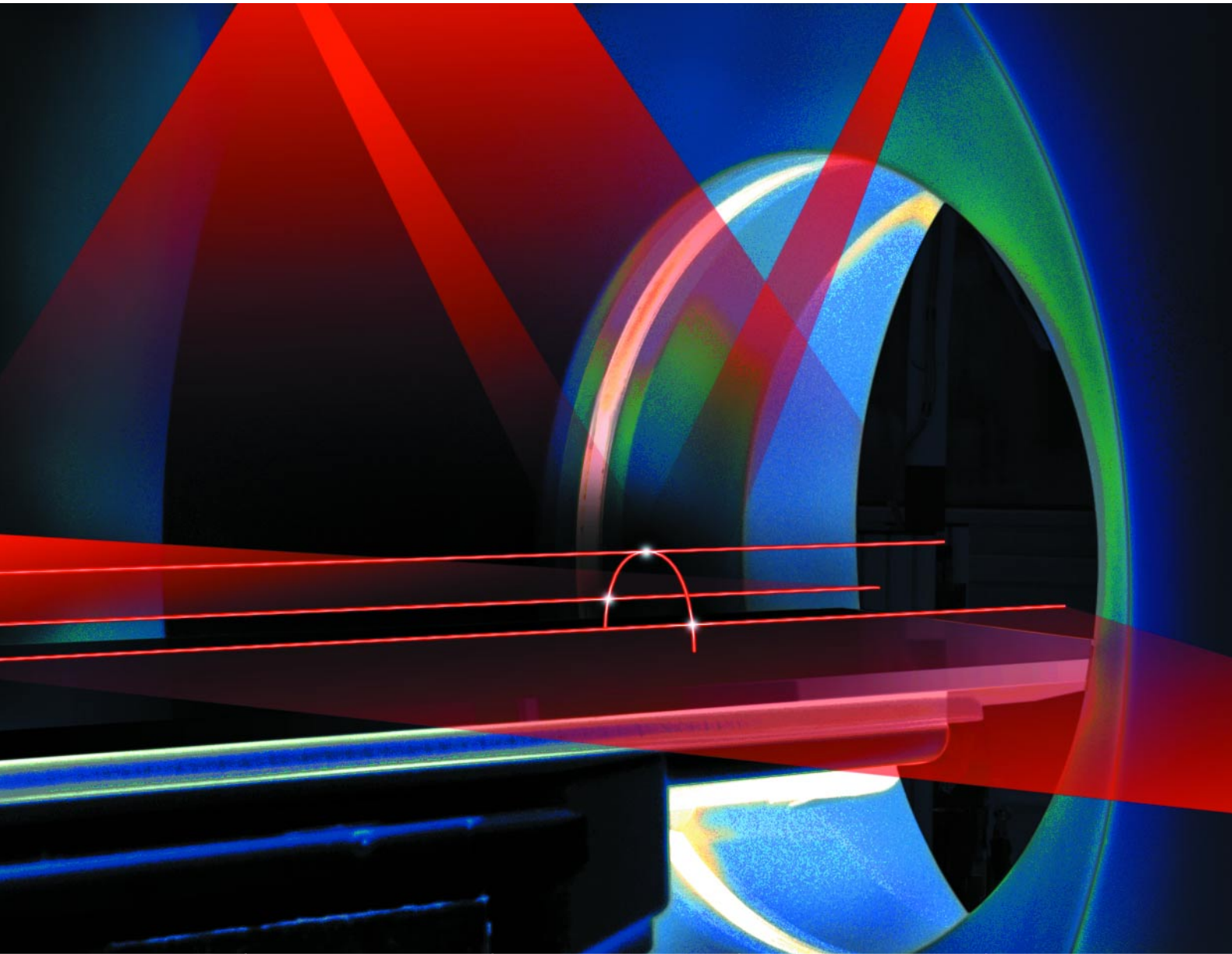
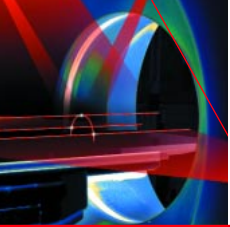


# DORADO

LASER SYSTEMS FOR SIMULATION





# DORADO 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.

## ACCURACY AND DEPENDABILITY

### ■ A Failsafe System

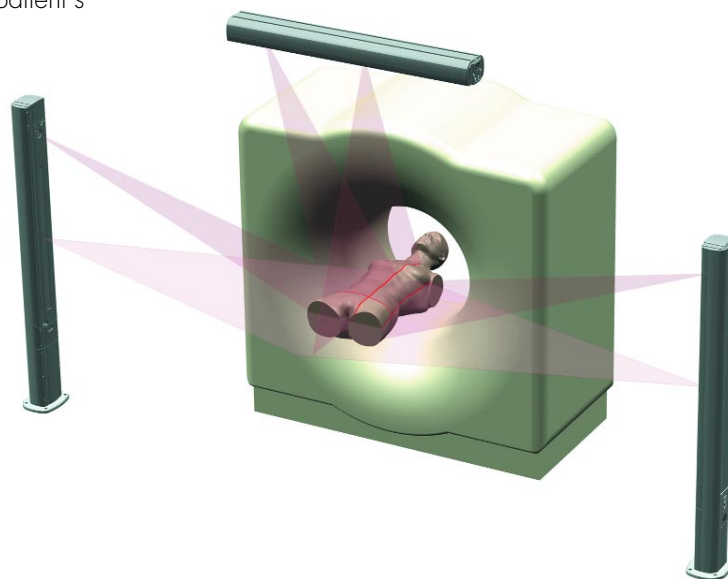
The built-in control circuit and linear encoder checks for possible stepper motor misses which, without independent verification, could go undetected. The control system compares the computed isocenter location with the laser position on the rail.

### ■ Confidence

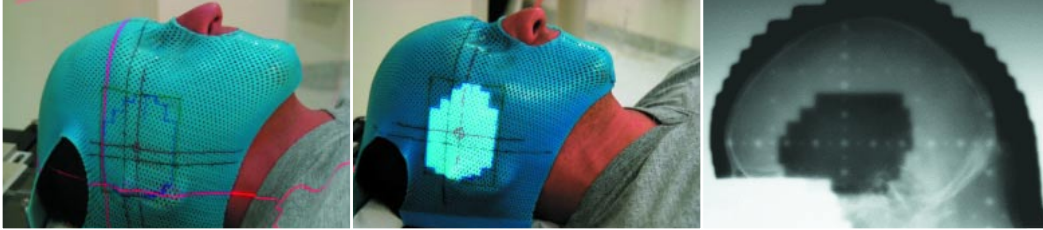
The lasers will only switch on after the control systems has verified that the lasers have reached the prescribed rail positions. These automatic control procedures assure that the isocenter location is accurately marked at all times.

### ■ High Manufacturing Standards

In-house design to the highest quality control ensure that the Dorado systems meet the stringent standards of ISO 9001:2000, ISO 13485:2000 and CE mark.







## **AUTOMATED PROCEDURE**

The LAP Isomark system makes patient marking simple and fail-safe for the therapist. Operations are under computer control when interfaced with a RTP or virtual simulation computer:

- Paperless transfer of laser coordinates
- Programmed laser movements
- Visual and printed records
- Automatic repeat laser positioning

The automatic marking procedures reduce operator training and virtually eliminate time consuming and potential error prone manual processes.

## **AUTO CALIBRATION**

No time consuming calibration. LAP's unique, absolute encoding system eliminates the need for any calibration.

## **CONNECTIVITY**

LAP Dorado systems interface to all major Treatment Planning Systems

## **LAP SITE PLANNING**

### **SUPPORT**

LAP Service and Planning Support Engineers work with your facility management to ensure a smooth and efficient installation and commissioning of your system.



# SPECIFICATIONS



## LASER MOVING SYSTEM

Moving distance	600 mm
Moving speed	> 100 mm per sec.
Selectable speeds	0.2-100 mm per sec.
Positioning accuracy	+ 0.25 mm
Projection accuracy	< 0.5 mm at 13 ft
Line length at 3m/10ft	6m/20ft (red), 2,7m/9ft (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
Terminal interface	RS 485
Isomark software	PC with Windows NT/2000/XP
Simulation data download	1-3 networks sequently
Dimensions	173 x 148 x 1084 mm

## TERMINAL (KEYPAD)

LCD Display	2 alphanumeric lines
Numeric keys	10
Function keys	9
One key switching	CT zero, patient zero
Computer control	full function processing
Manual control	full function processing
Readout	0.1 mm
Laser on/off	1 key
Laser speed control	10 levels

## LASER MODULE

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



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



