

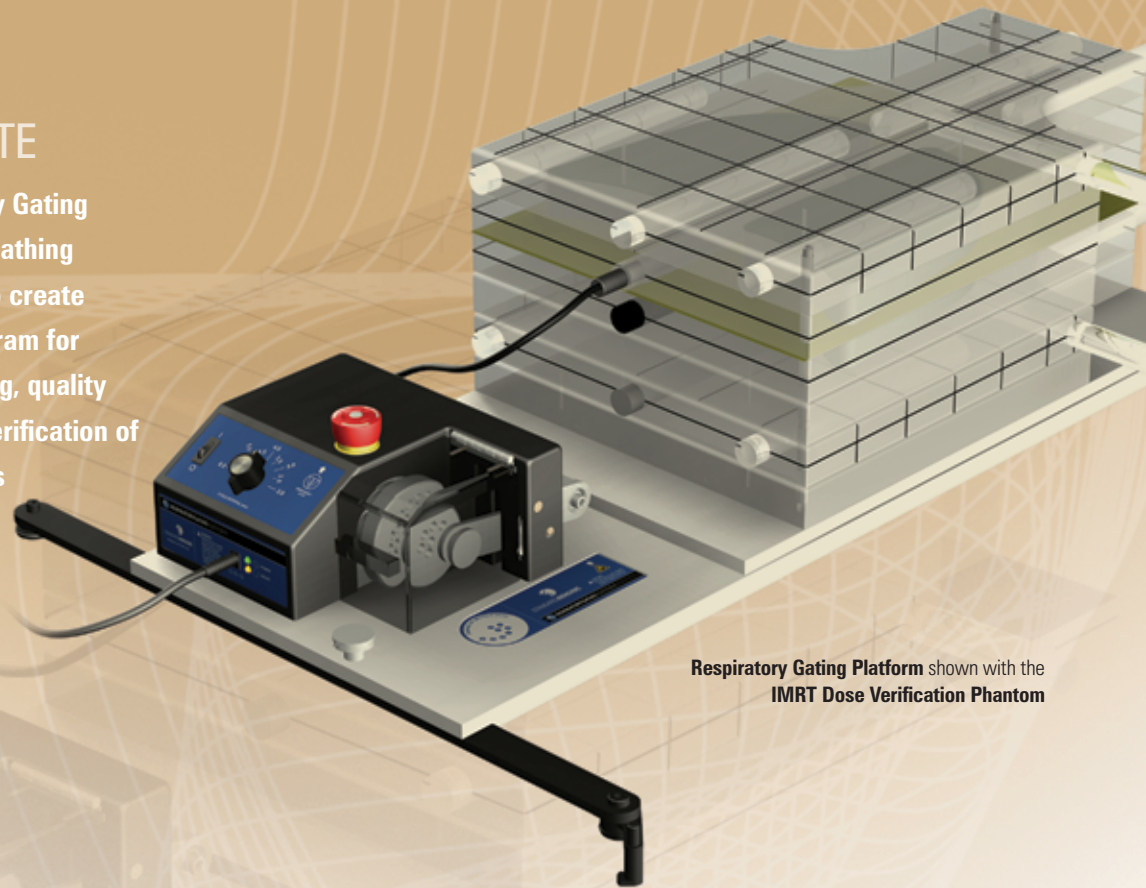


RESPIRATORY GATING PLATFORM



EASY, COMPLETE

The unique Respiratory Gating Platform simulates breathing providing the means to create a comprehensive program for commissioning, training, quality assurance and dose verification of gated IMRT treatments



Respiratory Gating Platform shown with the IMRT Dose Verification Phantom

● ACCURATELY SIMULATES BREATHING MOTION

The Respiratory Gating Platform supports and secures IMRT phantoms for placement on the CT simulator and treatment couch. Designed for the Standard Imaging IMRT Dose Verification Phantom, it also accommodates other manufacturer's phantoms or even 2D arrays. The simulated breathing provides a thorough test of the entire system and the Respiratory Gating Platform allows you to:

- Create the longitudinal movement of a target over a 5 mm to 40 mm distance to replicate tumor movement
- Relate the longitudinal movement to the respiratory amplitude to mimic and evaluate treatment plans
- Independently control the range of motion and the respiratory cycle to evaluate how a change in either one independently affects a treatment plan

● ASSURES THE BEST TREATMENTS FOR PATIENTS

Commissioning followed by training with the Respiratory Gating Platform provides validation of the TPS and the proper administration of gated IMRT treatments.

● COMPREHENSIVE SYSTEM FOR EASY QA PROGRAM SETUP

The Respiratory Gating Calibration System is a convenient way to quickly and easily provide what is needed for commissioning and training. This comprehensive system is composed of the Respiratory Gating Platform, IMRT Dose Verification Phantom, MAX 4000 Electrometer and Exradin A14 SL Microchamber. The comprehensive system allows you to:

- Commission and perform quality assurance for imaging and treatment techniques such as respiratory gating and 4D radiotherapy
- Train physicians, physicists, and therapists on the implementation of imaging and treatment techniques
- Determine errors in imaging and the radiotherapy process
- Perform functional verification of the accelerator's respiratory gating features
- Perform dosimetric verification of respiratory gated treatments using ion chambers, film or diodes in the versatile IMRT Dose Verification Phantom

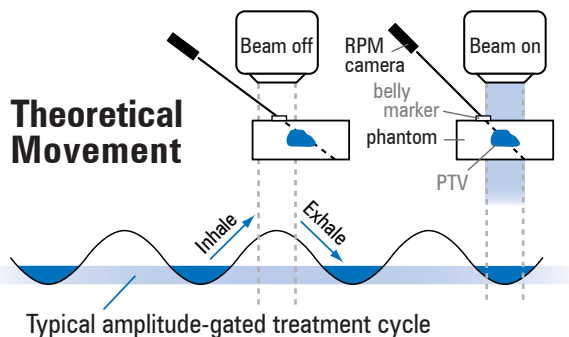


Features

- Simulates breathing motion
- Longitudinal movement of 5 mm to 40 mm
- Cycle interval is adjustable from 2.0 – 6.0 seconds
- Independently control the range of motion and the respiratory cycle
- Locking mechanism secures platform to couch
- Secure phantom to platform; move the entire platform with the phantom locked in place from the CT couch to the treatment couch
- Accommodates a variety of phantoms or 2D arrays
- Simulate tumor movement with the optional Lung Tumor Insert (REF 70170) for IMRT Dose Verification Phantom

1D — An Effective Solution

- Whatever the type of motion, simple or complex, regular or irregular, the Varian RPM™ camera and belly block are always monitoring belly motion. Only when the belly block is in the correct position is the target irradiated.
- In the theoretical example below, the tumor is free to move in any direction. There is only interest in irradiating the tumor in the darker blue region. This is typically during exhale, when the motion is at its minimum.
- From the camera's eye view, the respiratory signal generated by the Varian belly block is only 1D regardless of the tumor motion, so additional 2D or 3D data does not substantially improve plan accuracy.



Respiratory Gating Calibration System

MAX 4000 Electrometer

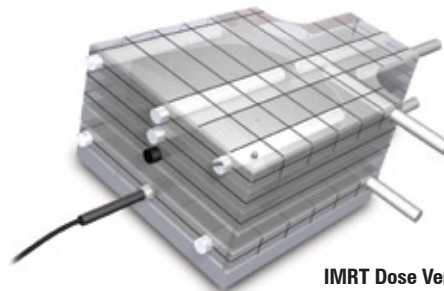
- Automatic threshold detecting trigger mode
- Excellent sensitivity — 0.001 pA to 500.00 nA, 0.01 pC to 999,999 nC
- Digital filter virtually eliminates the effect of noise
- Comprehensive display shows amp, coulomb, and collection time simultaneously
- MAX COMM™ Software for management of instrument and calibration libraries and acquired data points

Model A14SL Exradin Microchamber

- Small Volume, 0.016 cc, for excellent spatial resolution
- Small field size, 4 x 6 mm
- Uniform isotropic response
- Constructed of C552 Shonka air-equivalent plastic

IMRT Dose Verification Phantom

- Anthropomorphic design mimics human anatomy which assists in set up and treatment for patient dose verification
- Slab-based system allows for varied thicknesses; interlocking pin system secures slabs together
- Combines absolute, relative and point dose measurements, with up to 16 chamber positions, 5 film positions and optionally up to 9 diodes or TLDs
- Captures the dose contribution of all fields and segments, as well as showing hot and cold spots on the film, for comparison to the treatment plan using a fast coronal film orientation
- Incorporates inhomogeneity structures with bone and lung equivalents
- Available in acrylic or Virtual Water™ material



IMRT Dose Verification Phantom

RESPIRATORY GATING PLATFORM (REF 91150) SPECIFICATIONS

DIMENSIONS	Height: 12.7 cm (5 in) Length: 76.2 cm (30 in)	Width: 30.5 cm (12 in) Weight: 9.1 kg (20 lbs)
RANGE OF MOTION CONTROL	5 mm - 40 mm, with 5 mm increments	
ACCURACY AND REPEATABILITY	± 0.5 mm	
POWER REQUIREMENTS	12 VDC @ 1.25 A, power supply included	

PERIOD OF OSCILLATION CONTROL	2 - 6 sec, 0.5 sec increments
ACCURACY	± 0.2 second when using: 4 Standard Imaging IMRT Phantom slabs (~34 lbs.) 6 Standard Imaging IMRT Phantom slabs (~51 lbs.) 8 Standard Imaging IMRT Phantom slabs (~68 lbs.)
REPEATABILITY	± 0.1 second for 4, 6 or 8 Standard Imaging IMRT Phantom slabs

RPM™ is a trademark of Varian Medical Systems. Virtual Water™ is a trademark of Med-Cal. Specifications subject to change without notice.



3120 Deming Way Middleton WI 53562-1461 USA
 800-261-4446 . ph 608-831-0025 . fax 608-831-2202
 www.standardimaging.com