RUBY

SYSTEM QA · LINAC QA · PATIENT QA

The Modular QA Phantom

PTW
THE
DOSIMETRY
COMPANY

RUBY

As Flexible As Your Needs.

The New Modular Phantom Platform
for High-Precision Radiotherapy
and SRS/SBRT QA

With its unique modular phantom design and variety of application-specific inserts, RUBY combines versatility with unrivaled flexibility in radiotherapy QA.

Perform integrated tests of the entire treatment chain with one basic phantom by adding and expanding QA capabilities as and when you need them.

System Overview

- ▶ Technologically advanced, new modular phantom platform with powerful, ready-to-use application-specific inserts
- ▶ Unrivaled flexibility – add and combine inserts as needed
- ▶ Fast, simple system setup and operation – insert and start testing
- ▶ Comprehensive end-to-end testing of the entire SRS/SBRT treatment process with one single insert
- ▶ Measurement-based patient-specific plan verification, including non-coplanar treatments, with film and different detector types

- ▶ Alignment checks of the entire system, including 6D couches
- ▶ CT markers in phantom and all inserts for enhanced visibility
- ▶ Tissue-equivalent materials that follow ICRU-44/-46 standards
- ▶ Supports the latest radiotherapy treatment techniques and systems, including SRS, SBRT, SGRT, Varian Halcyon™ and Elekta Unity
- ▶ All components designed and manufactured with submillimeter precision
- ▶ Integrated, compatible solution – phantom, inserts, detectors from one single source

RUBY

One Phantom. Multiple Inserts. All Tasks.

System QA

Highlights

- ▶ Comprehensive end-to-end testing and patient QA of stereotactic treatments (SRS, SBRT, SRT) as recommended in major QA protocols and guidelines, including AAPM TG-101
- ▶ One single insert for all tests
- ▶ Clinically tested MRI visibility in all commonly used sequences (T1, T2 and FLAIR at 1.5 T) – no additional components required
- ▶ ICRU-based tissue-equivalent materials (brain, lung and bone) for enhanced CT visibility
- ▶ CT and MRI cavities for accurate verification of the CT/MRI image fusion algorithm of the treatment planning system
- ▶ Compatible with patient positioning systems and patient masks
- ▶ Patient-specific single-point dose measurements with different detector types using the same insert
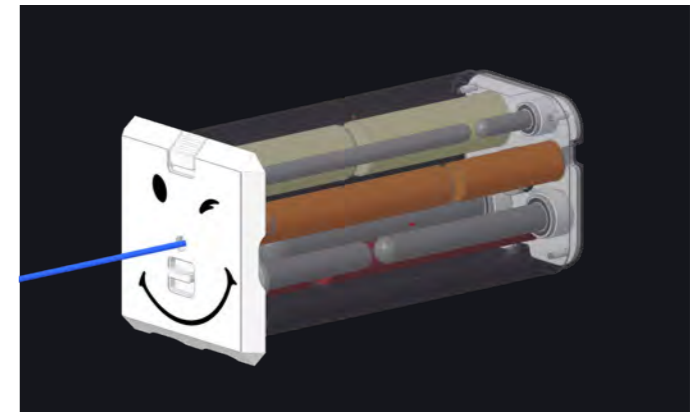
RUBY Insert "End-to-End Test" for System QA

LINAC QA

Highlights

- ▶ Daily checks of IGRT and SGRT positioning accuracy, including remote-controlled couches as recommended by AAPM TG-179 and TG-142
- ▶ Tissue-equivalent bone structures for enhanced visibility in kV and MV images
- ▶ High-density radiopaque sphere at isocenter for easy Winston-Lutz testing
- ▶ Hidden target tests as recommended by AAPM TG-147
- ▶ Automated analysis of EPID images with optional PTW IsoCheck^{epid} software
- ▶ Integrated with Track-it for automated trending and reporting

Options

- ▶ RUBY Tilting Base for easy 6D Couch QA
- ▶ IsoCheck^{epid} Software for EPID-Based Isocenter Verification
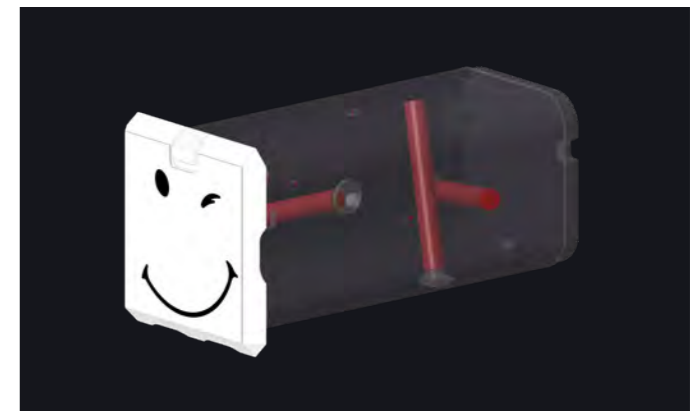

RUBY Insert "Alignment/Isocenter Check" for LINAC QA

Patient QA

Detector Insert

- ▶ One insert for fast, accurate single-point dose measurements with different detector types
- ▶ Unique "Plug and Measure" convenience using detector holders – no need to replace phantom or exchange inserts
- ▶ Measurement-based single-point dose verification of patient plans, including non-coplanar treatment plans

Film Insert

- ▶ Homogeneous insert designed for use with high-resolution radiochromic films
- ▶ Film-based patient plan verification for high-precision radiotherapy and SBRT/SRS, e.g., CyberKnife®
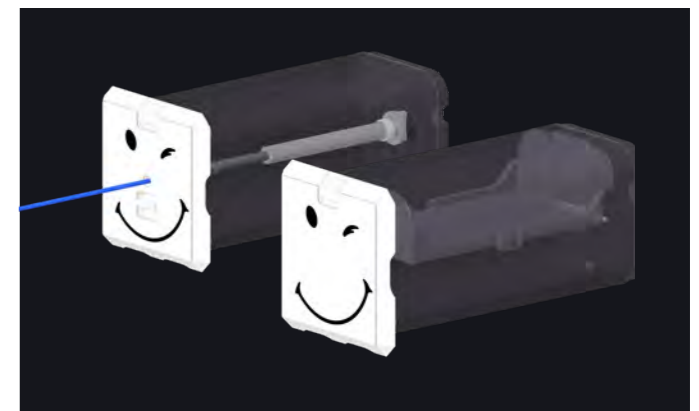
RUBY Insert "Detector" and RUBY Insert "Film" for Patient QA