



MR 5101 - STANDARD CALIBRATION PHANTOM

for Absorbed Dose Calibration at Different Depths in Horizontal Photon and Electron Beams

The water phantom **MR 5101** is designed to be used for calibration and intercomparison measurements with ionization chambers used in radiotherapy in horizontal photon and electron beams.

There are three positioning systems available for water phantom **MR5101**. The first one is compatible with design of former IAEA SSDL Phantom and has step 25mm. The second one allows finer positioning thanks to step 5mm. The third one provides finest positioning because of continuous positioning using holding arm. The second and third system offer a possibility to calibrate up to three chambers simultaneously moreover.

The continuous positioning system with holding arm can be delivered in motorized version, which in connection with appropriate SW can be used as Virtual Instrument for various automated measurements controlled by PC.

There are plenty of waterproof adapters **MR 5101A-*** available for all three positioning systems and most common ionization chambers. Also it is possible to deliver customized adapter according the needs for special purpose.

For precise phantom setting both according beam axis and/or fields size it is equipped by etched cross hairs on entrance windows and optionally can be phantom vessel equipped with leveling stands.

The phantom is delivered with drain tap for emptying which ensure more comfortable work without need to change the phantom's position.

Technical Data

- external dimensions are 300x300x300mm, wall thickness is 15mm (20mm on request)
- phantom vessel is equipped with two windows :
 - dimensions of the entrance windows are optional – 120x120x3mm and/or 170x170x3mm
 - the first is aligned with the wall outside surface
 - the second one is aligned with the inner wall surface to allow to set chamber to small depth.
 - windows has etched cross hairs for precise alignment both for beam axis and for fields sizes
- precise positioning system consists of replaceable holding devices and appropriate chamber adapters :
 - system for positioning in increments of 25mm – compatible design with former IAEA SSDL Phantom
 - system for positioning in increments of 5mm – up to three chambers simultaneously
 - system for continuous positioning using holding arm – available in motorized version with PC control
 - all positioning systems have the overall setting accuracy ± 0.1 mm or better
- drain tap for emptying without tilting or changing the phantom's position
- optionally can be phantom vessel equipped with leveling stands

Options

- Adapters for positioning system within 25mm increments :
 - MR 5101A-S01** Adapter for Farmer-type ion. chambers **MR 2101, MR 2102**, NE2571, NE2581, PTW3001* etc.
 - MR 5101A-S02** Adapter for routine ionization chambers series **MR 22**** (outer diameter 6mm)
 - MR 5101A-S03** Adapter for routine ionization chambers series **MR 23**** (outer diameter 5mm)
 - MR 5101A-S12** Adapter for ionization chambers NE 2561, NE 2611 (Secondary Standard)
 - MR 5101A-S14** Adapter for ionization chambers PTW 31002 (233642), PTW 31003 (233641), PTW 23323
 - MR 5101A-S16** Adapter for plane-parallel ionization chamber PTW 34001 (Roos type)
 - MR 5101A-S71** Adapter for TLD capsule irradiation
 - MR 5101A-Sxx** Adapter for customer ionization chamber ... *ON REQUEST*
- Adapters for positioning system within 5mm increments :
 - MR 5101A-F01** Adapter for Farmer-type ionization chambers **MR 2101, MR 2102**, NE2571, NE2581, PTW etc.
 - MR 5101A-F02** Adapter for routine ionization chambers series **MR 22**** (outer diameter 6mm)
 - MR 5101A-F03** Adapter for routine ionization chambers series **MR 23**** (outer diameter 5mm)
 - MR 5101A-F12** Adapter for ionization chambers NE 2561, NE 2611 (Secondary Standard)
 - MR 5101A-F14** Adapter for ionization chambers PTW 31002 (233642), PTW 31003 (233641), PTW 23323
 - MR 5101A-F16** Adapter for plane-parallel ionization chambers PTW 34001 (Roos type)
 - MR 5101A-F71** Adapter for TLD capsule irradiation
 - MR 5101A-Fxx** Adapter for customer ionization chamber ... *ON REQUEST*
- Adapters for continuous positioning system :
 - MR 5101A-M01** Adapter for Farmer-type ionization chambers **MR 2101, MR 2102**, NE2571, NE2581, PTW etc.
 - MR 5101A-M02** Adapter for routine ionization chambers series **MR 22**** (outer diameter 6mm)
 - MR 5101A-M03** Adapter for routine ionization chambers series **MR 23**** (outer diameter 5mm)
 - MR 5101A-M12** Adapter for ionization chambers NE 2561, NE 2611 (Secondary Standard)
 - MR 5101A-M14** Adapter for ionization chambers PTW 31002 (233642), PTW 31003 (233641), PTW 23323
 - MR 5101A-M16** Adapter for plane-parallel ionization chambers PTW 34001 (Roos type)
 - MR 5101A-M71** Adapter for TLD capsule irradiation
 - MR 5101A-Mxx** Adapter for customer ionization chamber ... *ON REQUEST*
- Accessories :
 - MR 5101T** Transport & storing case for phantom MR 5101 (black or metal design)