



AAPM TG-218

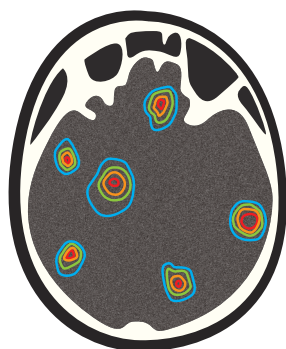
# OCTAVIUS Detector 1600 SRS

The unique dedicated solution for 3D SRS/SBRT  
Patient QA, especially for SIMT plans

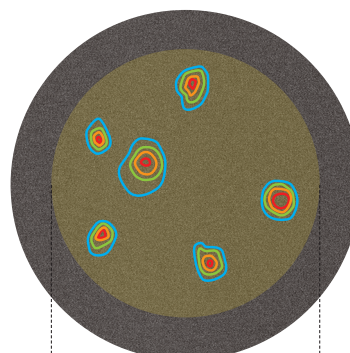
# OCTAVIUS 4D

## True 3D plan verification

Patient dose distribution of a multiple target SRS treatment

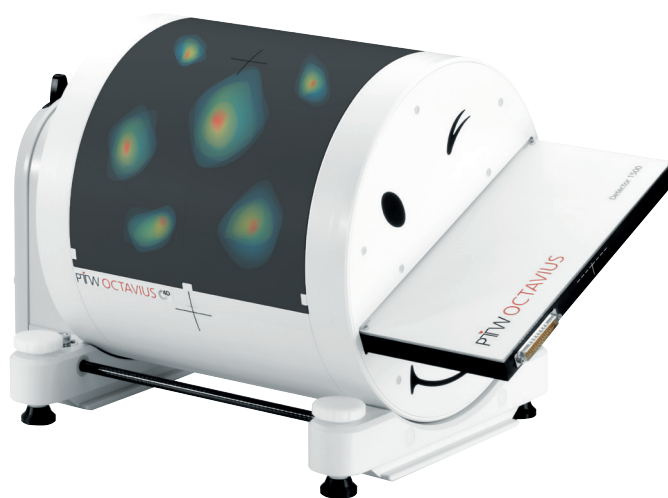


Phantom dose distribution



Measured area  
OCTAVIUS 1600 SRS

Combined with the OCTAVIUS 4D, the OCTAVIUS Detector 1600 SRS allows TPS independent 3D patient plan verification



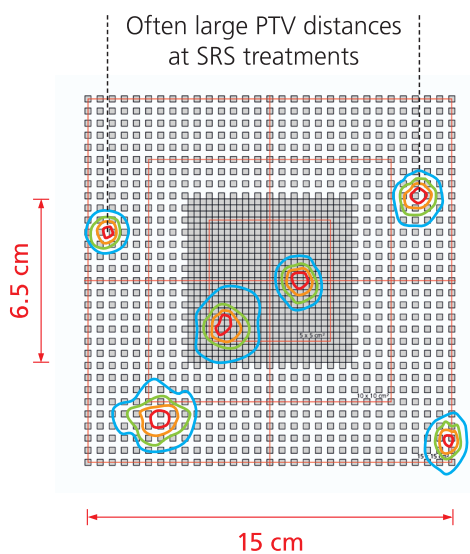
In a two-dimensional system, the dose distribution of a single isocenter multiple target (SIMT) plan can only be measured if all metastasis are lying on one plane. Besides two-dimensional patient plan verification, the OCTAVIUS Detector 1600 SRS combined with the OCTAVIUS 4D can measure a three-dimensional dose distribution in the whole phantom volume as described in AAPM TG-218.

This makes the OCTAVIUS Detector 1600 SRS, in combination with the OCTAVIUS 4D, a perfect solution for single isocenter multiple target plans when metastasis are on different planes.

OCTAVIUS 4D combines the advantages of the different measurement methods mentioned in **AAPM TG-218**:

- ▶ All inaccuracies of the linac are reflected in the measurement.
- ▶ The measured dose distribution closely mimics the dose that will be delivered to the patient.
- ▶ There is only one 3D dose distribution for the entire treatment plan that must be analyzed.
- ▶ Because of the rotating phantom, all fields or segments are directly measured by the detector.

## Time-saving workflow: No detector array shifts needed



As multiple target volumes are often widely-spaced, it depends on the array size if multiple measurements are needed. Depending on the treatment plan, this can be very time-consuming.

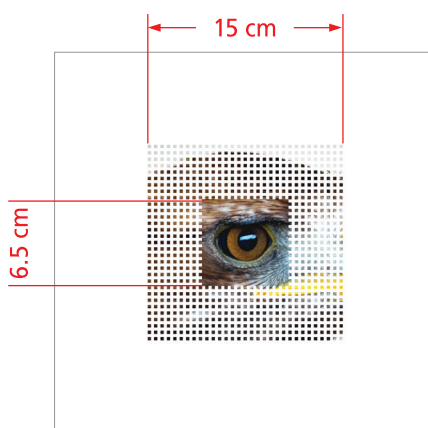
The OCTAVIUS Detector 1600 SRS allows patient specific QA for multiple, widely-spaced target volumes within a single measurement due to its large detector area of 15 x 15 cm<sup>2</sup>. This saves QA time and ensures a more efficient workflow.

With its high spatial resolution in the center (2.5 mm) and large detector area, the OCTAVIUS Detector 1600 SRS ensures excellent coverage of all clinically relevant regions and enables detections of undesired 'dose streets' around the target volume. Therefore, it is the perfect solution for TPS independent SRS/ SBRT patient QA.

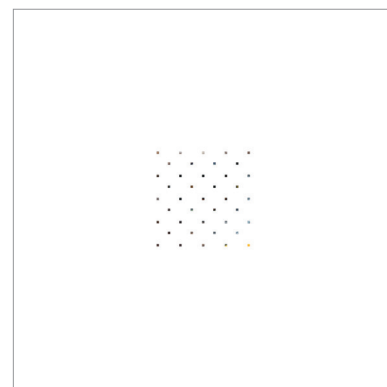
## The gold standard: long-living, high-resolution ionization chamber array



Original picture



OCTAVIUS Detector 1600 SRS



Diode detector

Compared to diode detectors or solid state detectors, ionization chambers guarantee the following benefits:

- ▶ A long lifetime of the detector
- ▶ No recalibration necessary due to its stable and reliable signal even with accumulated dose
- ▶ Water-equivalent measurements
- ▶ Minimal angular dependence
- ▶ Measurements with a well-established, high-resolution system
- ▶ An excellent field coverage due to its finite ionization chamber size.

## Related Literature

The use of the OCTAVIUS Detector 1600 SRS ensures high-resolution measurements which were already approved by its predecessor, the OCTAVIUS Detector 1000 SRS.

Different publications demonstrate that the OCTAVIUS Detector 1000 SRS is an excellent solution for very small and complex fields.





# The Dosimetry School

## Small field dosimetry, IMRT/VMAT patient plan verification and Linac QA

The course provides basic knowledge in a compact form about the new Code of Practice IAEA TRS 483 standard for the clinical dosimetry of small regular and irregular photon radiation fields, as they are used in stereotactic and fluence-modulated radiation therapy (IMRT), rotational radiation (e.g. VMAT, tomotherapy) and high-energy gamma and photon radiation. The focus is on the application of the standard in clinical practice.

Among other things, recommended measuring methods with reference ionization chambers and suitable calibrated

detectors as well as important correction factors are presented. On the basis of real examples, typical problems in the dosimetry of small fields are shown and suitable solutions are discussed.

The course addresses key issues in small field dosimetry, patient plan verification and Linac commissioning and QA. As such, it is very well suited for medical physicists who want to update and extend their skills and knowledge of practical dosimetry.

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