



STARCHECK Ion Chamber Panel

Measures star profiles of high-energy therapy beams in real-time

Long term reputation in the medical industry.

Assurance we will offer competitive pricing.

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LACO Inc.

can do it all!

Features

- * Measures high-resolution profiles along the principal axes and along the diagonals
- * Measures congruence between light field and radiation field
- * Checks positions of MLC leaves

STARCHECK is a precise and reliable tool for fast measurements in radiation therapy beams. Typical applications are quality control and LINAC beam adjustment measurements with the detector panel embedded in a solid state phantom. The ionization chambers feature an excellent relative response stability, avoiding the need of frequent recalibration.

A full set of 4 profiles is measured every 200 ms, making the device useful for real-time measurements. The excellent spatial resolution of only 3 mm ensures precise measurements even in penumbra regions. The scanning lengths covered by the detectors are 25.2 cm along the principal axes and 34.5 cm along the diagonals.

Detectors on the field boundaries allow the congruence between light and radiation field to be checked. The device is aligned visually to the light field, and the position of the radiation field is measured and compared with the expected ideal location. Shifts of 1 mm or rotational deviation of 1° can be easily detected.

Two rows of detectors allow MLC leaf positions to be verified. Up to 53 leaf pairs with a width of 5 mm can be checked in one run. Deviations of (0.5 ... 1) mm can be detected by STARCHECK.

The delivery includes the detector panel, an interface box which connects to a PC via RS232 interface, and data acquisition software.

Specification

- | | |
|---------------------------------------|---|
| * Type of product | Two-dimensional detector panel with 527 ionization chambers in one plane |
| * Application | Quality control of high-energy beams in radiation therapy |
| * Measuring quantity | Absorbed dose in Gy |
| * Measuring range | 200 mGy ... 1000 Gy |
| * Range of use | 500mGy/min ... 20 Gy/min |
| * Resolution | 1 mGy |
| * Dead time | zero |
| * Display cycle | 200 ms |
| * Type of detectors | Vented plane-parallel ionization chambers |
| * Polarizing voltage | 1000 V |
| * Chamber saturation | ³ 99% for pulsed radiation up to 0.3 mGy/pulse |
| * Detector layout | 83 measuring points on each principal axis, 109 measuring points on each diagonal, 2 x 53 measuring points for MLC checks |
| * Detector spacing (center to center) | 3 mm along profiles and diagonals ¹
5 mm for MLC checks |
| * Scanning Lengths | 25.2 cm along principal axes, 34.5 cm along diagonals |
| * Size of detectors | Sensitive volume 0.08 cm ³
electrode spacing 5 mm |
| * Reference point | 5 mm below surface |
| * Field sizes | 10 cm x 10 cm,
20 cm x 20 cm,
26 cm x 26 cm |
| * Outer dimensions | 300 mm x 400 mm x 22 mm |
| * Material | PMMA |
| * Weight | approx. 3.2 kg |

¹Spacing of the three center detectors is 5 mm (profiles) and 13 mm (diagonals) respectively