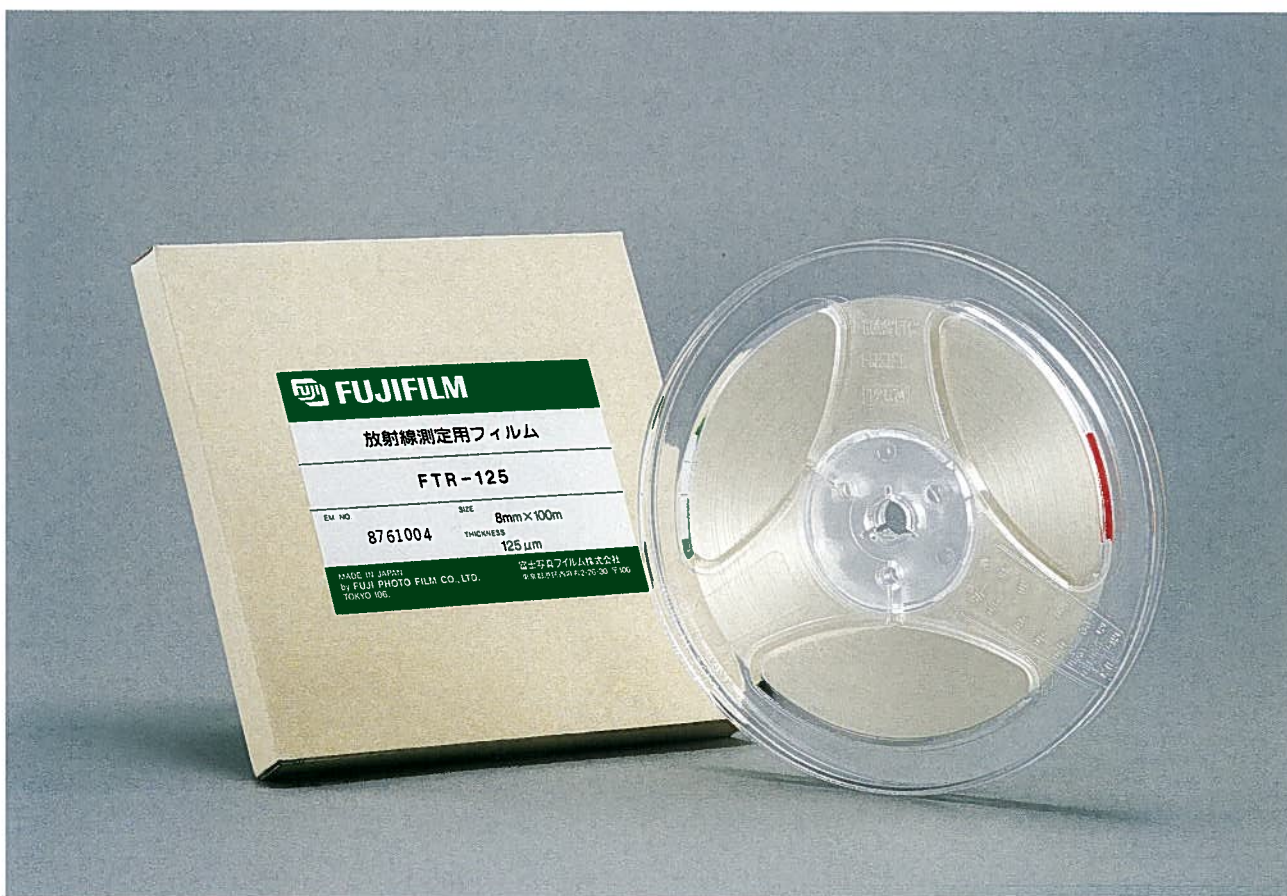


FUJIFILM

**for Dosimetry
in Electron Beam, Gamma-ray, and Ion Beam Irradiations**

CELLULOSE TRIACETATE (CTA) DOSIMETER

FTR-125



CTA dosimeter is an accurate and precise film dosimeter of which the optical density increases by radiation exposure. It is most suitable for radiation processing, materials testings and related various research and development.

Characteristics

- Linear dose response
- Simple measurement procedure
- High spatial resolution
- Applicable to ion beam dosimetry

This dosimeter was developed under the direction of Japan Atomic Energy Research Institute.

Accurate and precise dosimetry is essential to quality control in industrial radiation processing and R&D using radiation from large radionuclide and machine sources. CTA dosimeter, FTR-125, has been developed for routine dosimetry in these fields. The optical density of the dosimeter film increases linearly with absorbed dose for electron beams, gamma-rays, and ion beams. Since the dosimeter is in the shape of a thin long tape, it allows to accurately and conveniently measure dose distributions on the surface of irradiated samples and depth-dose distributions in the samples with high spatial resolution.

MAIN SPECIFICATION

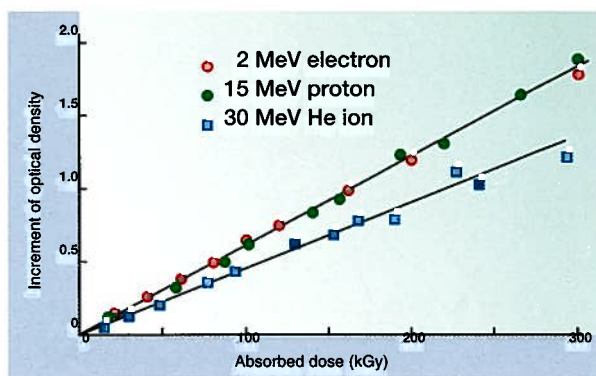
Film thickness	125 μ m (\sim 15mg/cm ²)
Dimension	width : 8mm, length : 100m/reel
Composition	cellulose triacetate, triphenyl phosphate
Analyzing wavelength	280nm
Usable dose range	5kGy—300kGy

METHOD OF MEASUREMENT

Absorbed dose is evaluated from the measured value of the increment of the optical density at the wavelength of 280nm induced by radiation. The optical density can be measured with ordinary U-V spectrophotometers. A reliable and convenient dose reader exclusively for CTA dosimeter is also commercially available from Nissin High Voltage Co., Ltd.

DOSE RESPONSES

Figure shows dose response curves for different particles beams of 2MeV electrons, 15MeV protons, and 30MeV helium ions. CTA dosimeter has linear response for all the particles, while the radiation sensitivity is relatively small in high LET region. The influences of temperature and relative humidity during irradiation on the sensitivity are negligible at high dose rates which are typical for electron irradiation.



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