

IG-13 GAMMA IRRADIATOR



MAIN ADVANTAGES

- Irradiator for three different radiation sources
- Provides homogenous, collimated beam with dose rate of up to 1 Gy/h
- Independent mechanical indicator of source carousel position
- Fully automated irradiation process
- Simple operation and maintenance
- Integrated safety system

PURPOSE

The IG-13 gamma irradiator fitted with appropriate radionuclide sources serves as a reference source of homogeneous collimated gamma-ray beam ranging from some tenths of $\mu\text{Gy/hr}$ to 1 Gy/hr. This type of equipment is normally used in metrology laboratories for the calibration of ambient gamma dose rate monitors and personal dosimeters.

IG-13 consists of a rotary carousel for up to three sources, and has lead shielding, a beam collimator, a mechanical source position indicator, a control unit and a safety and alarm system. The adjustable feet of the irradiator allow height adjustment of the collimated beam.

The sources are located at the carousel, which has three positions for sealed radionuclide sources and one parking position for putting the irradiator in a safe status. All sources are shielded in this forth parking position.

The irradiator and other components are fully remotely controlled from the host PC, which has the DARS application software for operating the laboratory.

When irradiation is commenced, the selected source is moved to the collimator opening.

The irradiator is fitted with a safety system that ensures irradiation stops in the case of a power failure: the exposed source returns into the shielded position by the gravity.

The irradiator can be fitted with different kinds of collimators. Collimators conforming to ISO 4037 are made of tungsten, whilst others are made of lead.

SPECIFICATION

Number of sources	max. 3
Max. activity of one source	5 TBq ^{137}Cs 18 GBq ^{60}Co
Dose rate (10 cm from the irradiator's surface)	< 1 $\mu\text{Sv/h}$ (^{137}Cs) <10 $\mu\text{Sv/h}$ (^{60}Co) ^{*)}
Dimensions (H × W × D)	1880 × 570 × 740 mm
Maximal source dimensions ($\varnothing \times h$)	16 × 24 mm
Weight with standard double shielding	1,2 t
Standard height of the beam axis	1,3 m
Source position setting time (rotation)	within 1,2 s
Power supply	110 / 230 V AC
Communication with host system	Ethernet

^{*)}With emergency shielding shutter

TYPES OF OPTIONAL COLLIMATORS

Type	Standard / Norm	Inlet diameter [mm]	Outlet diameter [mm]	Length [mm]
C-300	ISO 4037	60	130	260
C-330	GOST 8.087-2000	90	90	225

RELATED PRODUCTS

OG-8	Gamma Irradiator
GI-06	Gamma Irradiator
PGI-01	Panoramic Gamma Irradiator
CB-50	Calibration Bench

OPTIONAL ACCESORIES

K0539-02-C17A03	Emergency shielding shutter of collimator C-300 standard
-----------------	--



PGI-01 Panoramic Gamma Irradiator



OG-8 Gamma Irradiator