VF NUCLEAR

CALIBRATION LABORATORIES | NUCLEAR POWER PLANTS | RESEARCH CENTRES

GI-03

GAMMA IRRADIATOR

MAIN ADVANTAGES

- Irradiator for up to three gamma radionuclide sources
- Provides homogeneous collimated beam with dose rate of up to units of Gy/hr
- Low dose rate on the irradiator surface
- Fully automated irradiation process
- Integrated safety system
- ISO 4037:2019
- The sources do not rotate in the transport system

PUROSE

The GI-03 gamma irradiator, when fitted with appropriate radionuclide sources, and optionally equipped with an attenuator set, serves as a reference source of homogeneous collimated gamma ray beam ranging from some tenths of µGy/hr to Gy/hr. This type of equipment is normally used in metrology laboratories for the calibration of gamma dose rate and dose meters.

The GI-03 gamma irradiator consists of:

- a lead shielded rotating container for up to two radiation sources,
- a beam collimator,
- a control unit,
- safety and alarm systems.

The irradiator and other components are fully remotely controlled from a host PC, which has the DARS control software installed.

When irradiation is commenced, the selected source is lifted to the collimator opening and the irradiation begins.

The collimator meets the requirements of ISO 4037:2019. Lead is used as standard material for the collimator. Optionally, tungsten can be used.

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

Attenuators for the Cs-137 sources with a maximum attenuation factor of up to 1,000 may be installed in front of the irradiator. Attenuators are available with:

- manual control without indication
- manual control with electronic position indication
- remote control with electronic position indication

SPECIFICATIONS

Number of sources	max. 3
Max. source dimensions (ø × h)	44 × 65 mm
Dose rate on the irradiator's surface	See table of models
Standard height of the beam axis	1 500 mm
Accuracy of the source positioning	± 0.5 mm
Power supply	110 / 230 V AC
Communication interface	Ethernet

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MODELS

Model	Recommended maximum activity of one source	Dose rate on the surface	Dose rate at 30 cm from the surface	Weight [kg]	Dimensions H [mm]	W [mm]	L [mm]	D [mm]
K1820-01	^{137}Cs: 2 TBq (54 Ci)	12 μSv/h	1.5 μSv/h	780	1,720	800	800	465
K1821-01	^{137}Cs: 20 TBq (540 Ci)	12 μSv/h	1.5 μSv/h	920	1,720	800	830	505
K1822-01	^{137}Cs: 100 TBq (2,700 Ci)	0.5 μSv/h	< 0.2 μSv/h	1,280	1,720	800	845	590
K1823-01	^{137}Cs: 20 TBq (540 Ci) ^{60}Co: 2.7 GBq (0.07 Ci)	12 μSv/h 10 μSv/h	1.5 μSv/h 1.5 μSv/h	1,270	1,720	800	830	505
K1824-01	^{137}Cs: 100 TBq (2,700 Ci) ^{60}Co: 40 GBq (1.1 Ci)	0.5 μSv/h 10 μSv/h	< 0.2 μSv/h 2 μSv/h	1,630	1,720	800	845	590

Note: activities of the inserted sources can be higher than recommended maximum activities if a higher dose rate in the vicinity of the irradiator is acceptable.

OPTIONAL CONFIGURATIONS

Tungsten collimator

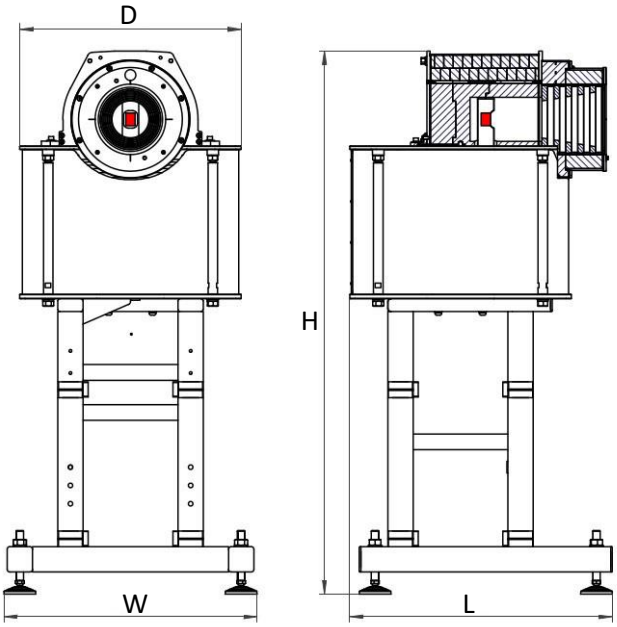
OPTIONAL ACCESSORIES

Laser system for beam axis definition

Set of attenuators

RELATED PRODUCTS

GI-01L	Gamma irradiator for one source
GI-01H	Gamma irradiator for one source
GI-07	Gamma irradiator for seven sources
CB-60	Calibration Bench
DARS	Control System for the Calibration Laboratory



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