



VF NUCLEAR



CALIBRATION LABORATORIES

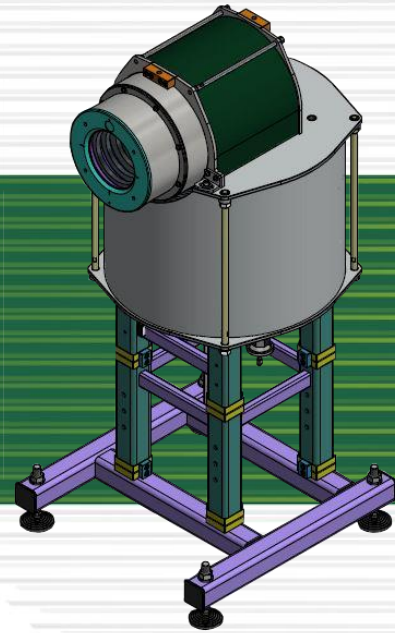


NUCLEAR POWER PLANTS



RESEARCH CENTRES

GI-01H GAMMA IRRADIATOR



KEY FEATURES

- Irradiator for one Co-60 radionuclide source
- Provides homogeneous collimated beam with dose rate up to Gy / h
- Low dose rate on the irradiator surface
- Fully automated irradiation process
- Integrated safety system
- ISO 4037:2019 complaint collimator
- The sources do not rotate in the transport system

PURPOSE

The GI-01H 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 $\mu\text{Gy/h}$ to Gy/h . This type of equipment is normally used in metrology laboratories for the calibration of gamma dose rate and dose meters.

The GI-01H Gamma Irradiator consists of:

- a lead shielded rotating container for one Co-60 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 Data and Control Software installed.

When irradiation is commenced, the 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 with a maximum attenuation factor of 5,000 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

The following sets are available:

- set with 3 attenuators
- set with 4 attenuators
- set with 6 attenuators
- set with 8 attenuators

Note: when attenuators are used, the shielding of the irradiator and collimator needs to be selected accordingly in order to meet the requirements of the ISO 4037:2019 standard.

SPECIFICATIONS

Number of sources	1
Max. source dimensions ($\varnothing \times h$)	(44 × 65) mm
Maximal dose rate	see table of models
Standard height of the beam axis	1,500 mm
Accuracy of the source positioning	$\pm 0,5$ mm
Power supply	110 / 230 V AC
Communication interface	Ethernet

GI-01H GAMMA IRRADIATOR

MODELS

Type	Recommended maximum activity of one source	Typical dose rate on the surface	Typical dose rate at 30 cm from the surface	Weight [kg]	Dimensions			
					H [mm]	W [mm]	L [mm]	D [mm]
K1768-01	⁶⁰ Co: 2.5 TBq (67,5 Ci)	7 μSv/h	1.5 μSv/h	1,770	1,720	800	800	570
K1768-02	⁶⁰ Co: 250 GBq (6,75 Ci)	9 μSv/h	2.0 μSv/h	1,350	1,720	800	800	490
K1768-03	⁶⁰ Co: 25 GBq (675 mCi)	6 μSv/h	1.5 μSv/h	1,050	1,720	800	800	420

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

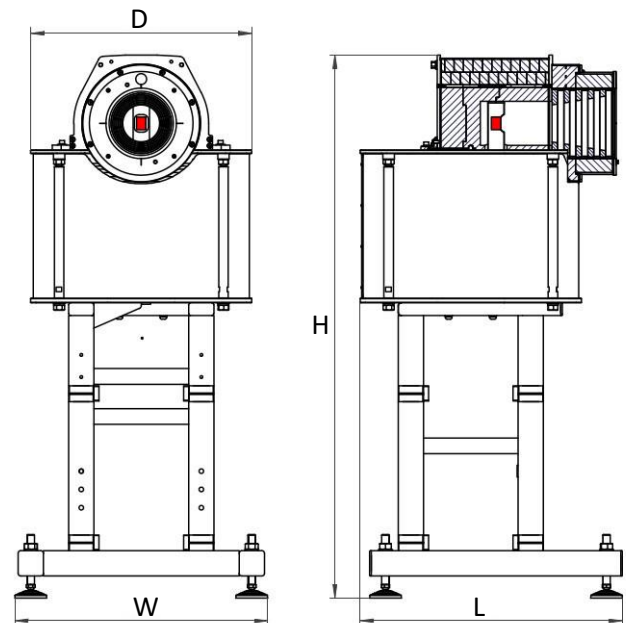
OPTIONAL ACCESSORIES

Laser system for beam axis definition

Set of attenuators

RELATED PRODUCTS

GI-01L	Gamma irradiator for one source
GI-02	Gamma irradiator for two source
GI-07	Gamma irradiator for seven sources
CB-60	Calibration Bench
DARS	Control System for the Calibration Laboratory



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Specification subject to change without prior written notice

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