



Gamma-Service Medical GmbH



**GSR C1**

Blood irradiation

## The main fields...

... of GSR C1 comprise gamma-irradiation of:

- Blood and blood derivatives
- Cell cultures
- Transplants.

Gamma-irradiation prevents the partitionability of immuno-competent cells. The transmission of these cells, without irradiation, can cause serious and often mortal complications – Graft-versus-host-disease (GVHD) – for immuno-deficient patients.

## Other fields of application...

... exist in the scope of radiobiological research:

- In-vitro-analysis of radiosensitivity of peripheric and modulated blood cells,
- Identification of histocompatibility via an analysis of the lymphocyte culture,
- Analysis – after irradiation – of the molecular mechanism in the case of diseases which are connected with a defect of the enzyme system.

## Standard equipment

The self-shielded GSR C1 contains up to 3 Cs-137 sources with a maximum total activity of 120 TBq. The half-life period of Cs-137 is about 30,2 years.

## Radiation protection

The dose rate of  $< 5 \mu\text{Sv/h}$  at the surface of the irradiation device is far below the regulated limit value.

## Our customer service...

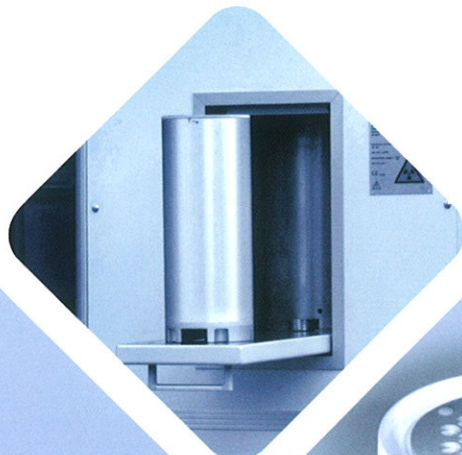
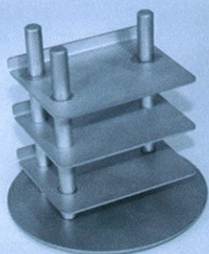
... includes:

- Maintenance
- Dosimetry
- Control of medical electrical devices according to EN 62353 (DIN VDE 0751-1).

## Operation

The user positions the irradiation good in the 3,8 l containing stainless steel irradiation beaker and puts it in the rotatable irradiation chamber. The complete closure of the tailboard is checked automatically. The opening of the tailboard is not possible during irradiation.

At the touch screen you set the irradiation parameters. After the manual starting of irradiation the irradiation drum rotates 180° and the beaker is located directly in front of the radiation sources. Parallel, the electronic control starts the rotary motion of the beaker with approx. 20 rpm. Thus a homogeneous dose distribution in the irradiation beaker is guaranteed. After operation time the irradiation chamber drives into the starting position and the rotation of the beaker is stopped. The tailboard can be opened and the beaker can be taken out.



## Delivery

The irradiation device is delivered in a licensed B(U) type transport packaging.

Scope of delivery

- Manual
- Dosimetry protocol
- Certificate of the radioactive source(s) with control of leak tightness
- Special form certificate
- 2 irradiation beaker

## Installation

The installation inclusive dosimetry is accomplished by authorised service technicians. Regarding the assembly a room size of minimum 2,5 m x 2,5 m is required. The floor loading is about 5,2 t/m<sup>2</sup>.



## TECHNICAL DATA

### Irradiation unit

Weight	2200 kg
External dimension	Height: 1700 mm Width: 680 mm Depth: 720 mm
Recommended room size	min. 2,5 m x 2,5 m
Electrical supply	100 - 240 V
Frequenz	50 / 60 Hz
Room temperature	+ 15 up to + 35 °C
Battery back-up	Yes
Certificate	CE, CFDA
Activity	40 to 120 TBq*

### Central dose rate

40 TBq	approx. 1,5 Gy / min
60 TBq	approx. 3,0 Gy / min
120 TBq	approx. 6,0 Gy / min

### Irradiation beaker

Volume	3,8 l
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### Source

Radionuclide	Cs-137
Surface dose rate	< 5 µSv/h

### Accessories optional

- PC set with DoseScanPRO Software
- PC working table
- Irradiation inserts

\* +/-20%



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