

# BIOBEAM

## Assembly and installation guidelines

### BIOBEAM Gamma Irradiation Device

Biobeam GM  
2000/3000/8000

#### Assembly and installation guidelines



#### 1. General information regarding the irradiation device

Device	Weight	Placing Area
Biobeam GM 2000	2.200 kg	0,45 m <sup>2</sup>
Biobeam GM 3000	2.200 kg	0,45 m <sup>2</sup>
Biobeam GM 8000	2.900 kg	0,81 m <sup>2</sup>

In order to avoid a point loading we deliver a steel plate which has the dimensions of the placing area. For installation of the Biobeam GM you need a sufficient floor loading capacity of the transport route and at the installation place.

All doors (on the transport route until the installation room) have to be at least 810 mm wide. The footprint of the installation room has to be at least 2 m x 2 m.

#### 2. Electrical connection

Electrical supply: 100 – 240 V, 50 – 60 Hz  
Power consumption: approx. 500 VA

For a proper operation of the irradiation device two separate electric-circuits with according poweroutlets are necessary:

- Electric-circuit 1: at least one „Schuko“ power-outlet for the operation of the irradiation
- Electric-circuit 2: one three-rate „Schuko“ power-outlet near the device for the PC working station

The distance between device and power-outlet should not exceed 1,5 m.

#### 3. Room conditions

Temperature: +15 - +35 °C  
Relative air moisture: 30 - 75 % without condensation (In areas with high moisture we recommend air condition)  
Atmosphere pressure: 860 - 1060 hPa  
Air ventilation: 5 renewals of air per hour (recommended)

#### 4. Radiation protection

Dose rate at the surface of the device: < 3 µSv/h (Biobeam GM 3000 < 5 µSv/h)

#### 5. Fire and anti-theft protection

The radioactive source fulfills the requirements according to ISO 2919, Classification: E63545 or E65546 (depends on the source type which will be used). Therefore, you need appropriate fireresistance walls and doors.

Please pay attention to your own national requirements!

The shielding elements of the irradiation device are capsuled in steel additionally in order to maintain the required radiation protection.

**The coordination regarding fire and anti-theft protection with the local fire department as well as with the appropriate authority are obligatory.**

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**Eckert & Ziegler**

Gamma Service Medical

### 6. License for handling with radioactive material

Regarding the export of the Cs-137 source  
(activity: 81,4 TBq +/- 20% equivalent to 2200 Ci) which  
belongs to BIOBEAM GM 3000/8000 or  
(activity: 44,4 TBq +/- 20% equivalent to 1200 Ci) which  
belongs to BIOBEAM GM 2000 we need:

a) for deliveries in the European Union:

- a copy of the EURATOM 1493/93 document

b) for deliveries to third countries:

- handling license for radioactive material from the end user
- import license
- End-Use-Certificate.

