

Superior Performance and Unparalleled Dose Uniformity

Quality and Safety Standards

All units are manufactured to comply with USFDA Good Manufacturing Practices and the European Medical Device Directive (and are CE marked). Best® Theratronics is ISO 9001 and ISO 13485 certified.

Certification and Documentation

Each Caesium-137 source meets the IAEA requirements for Special Form Radioactive material and is certified to be leak tight. A complete documentation package, including a unit specific dose map, and a measurement certificate of activity and central dose rate accompanies every Gammacell® 1000.

Customer Requirements

Customers need to obtain a radioactive materials possession license (or equivalent) and an import license (if needed) before the Gammacell® 1000 can be shipped. Best® Theratronics helps prepare license submission documents required for radioactive materials possession. When applying for a license, customers should quote 708 curies for Model A, 1524 curies for Model I, and 3048 curies for Model II.

Control System Features

- Multiple control systems for monitoring timing, beaker rotation and position of product
- 4 line vacuum fluorescent display with step-by-step user instructions
- Modular design of control system for easy maintenance and upgrades
- Bypass mode – allows operation of unit without main control system
- AC power backup – completion of current cycle, plus approximately 20 additional cycles in case of power failure
- Barcode reading capabilities (optional) scan barcodes from blood bags
- Digital traceability options-Ethernet (web browser) access and LIMS interface for electronic record keeping of irradiated product data (see troubleshooting manual for details)

Shipping

The Gammacell® 1000 is shipped in two parts:

- The radiation shield and radiation sources are sent together as a Radioactive Materials (RAM) transport package which meets international transportation and safety regulations.
- A second package contains the cabinet, control system and related parts.

Irradiator Details

Installed Weight	1150 kg (2,535 lb.)
Height	1550 mm (61 in.)
Width	800 mm (31.5 in.)
Length	980 mm (38.5 in.)
Floor Loading Area	0.78 m ² (8.4 sq. ft.)
Floor Loading	1467 kg/m ² (301 lb./sq. ft.)
Power	100, 115, or 230 Hz VAC; 50/60 Hz; 0.3kVA, with Ground connection
Dose Uniformity (typical)	25 Gy central 21 Gy minimum 29 Gy maximum 30 Gy central 25 Gy minimum 35 Gy maximum



Gammacell® 1000 Elite

Source Activity and Central Dose Rate

Model	Number of Sources	Nominal Source Activity		Central Dose Rate $\pm 20\%$		Estimated Timer Setting for:	
		TBq	(Ci)	Gy/min	(rad/min)	25 Gy central (Minutes)	30 Gy central (Minutes)
A	1	24.1	(575)	3.50	(350)	7.14	8.60
I	1	53.7	(1450)	8.50	(850)	2.94	3.53
II	2	107.4	(2900)	16.00	(1600)	1.56	1.88

Canister

Height (internal) 164 mm (6.5 in.)

Diameter (internal) 80 mm (3.1 in.)

Volume 824 ml (49 cu. in.)

Gammacell® 1000 with bar code and printer

Minimum distances from the unit to surrounding walls or other equipment for operation and maintenance are as follows:

- 36 inches from the front to allow an individual to stand in front of the unit and close the door behind them
- 24 inches on both right and left side to accommodate the roller lifts and printer
- 6 inches from the back wall so that you can plug the unit in and reach the cord
- Height from the floor should be 8 feet (96 in) (244 cm)

Typical Isodose Distribution in Water Equivalent Medium (absorbed dose values in Gy)

24.7	23.2	22.4	22.3	22.4	23.2	24.3
24.9	23.6	22.6	22.4	22.6	23.6	24.7
25.4	24.0	23.3	23.2	23.5	24.3	25.2
26.2	24.8	23.9	23.8	24.1	24.8	25.7
26.9	24.9	24.2	24.1	24.6	25.4	26.5
27.4	25.6	24.6	24.4	24.7	25.6	26.8
27.7	25.8	24.9	24.7	25.0	26.0	27.1
28.0	26.1	25.2	24.9	25.2	26.2	27.4
27.7	26.1	25.1	25.0	25.3	26.2	27.5
27.8	25.8	24.9	24.7	25.2	26.1	27.2
27.8	25.9	25.3	24.7	25.2	26.1	27.3
27.1	25.6	24.7	24.7	24.8	25.8	26.9
26.9	25.2	24.3	24.3	24.5	25.3	26.6
26.6	25.0	24.1	23.7	24.2	25.0	26.6
26.0	24.6	23.2	23.0	23.3	24.5	26.0
25.4	23.5	22.7	22.5	23.0	24.0	25.3
23.9	22.3	21.4	21.3	21.6	22.4	24.0

Figure 1: 25 Gy targeted to centre of canister

Note: 25 Gy = 2500 cGy = 2500 rad

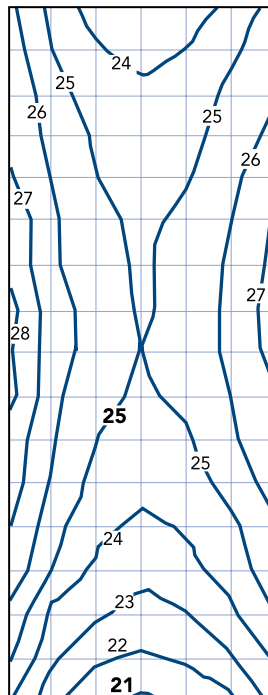


Figure 2: 25 Gy targeted to centre of canister

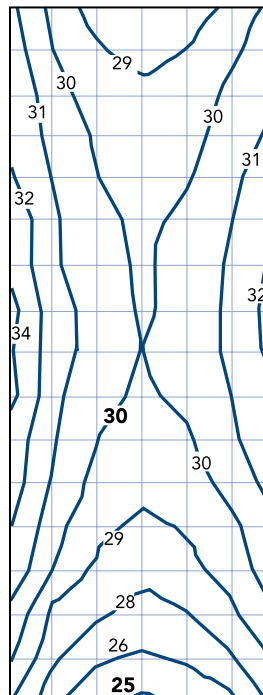


Figure 3: 30 Gy targeted to centre of canister

TOTAL ROOM SIZE should be 7 feet wide by 6 feet deep, as the machine is 31 inches wide and 39 inches deep with the shelf on.

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