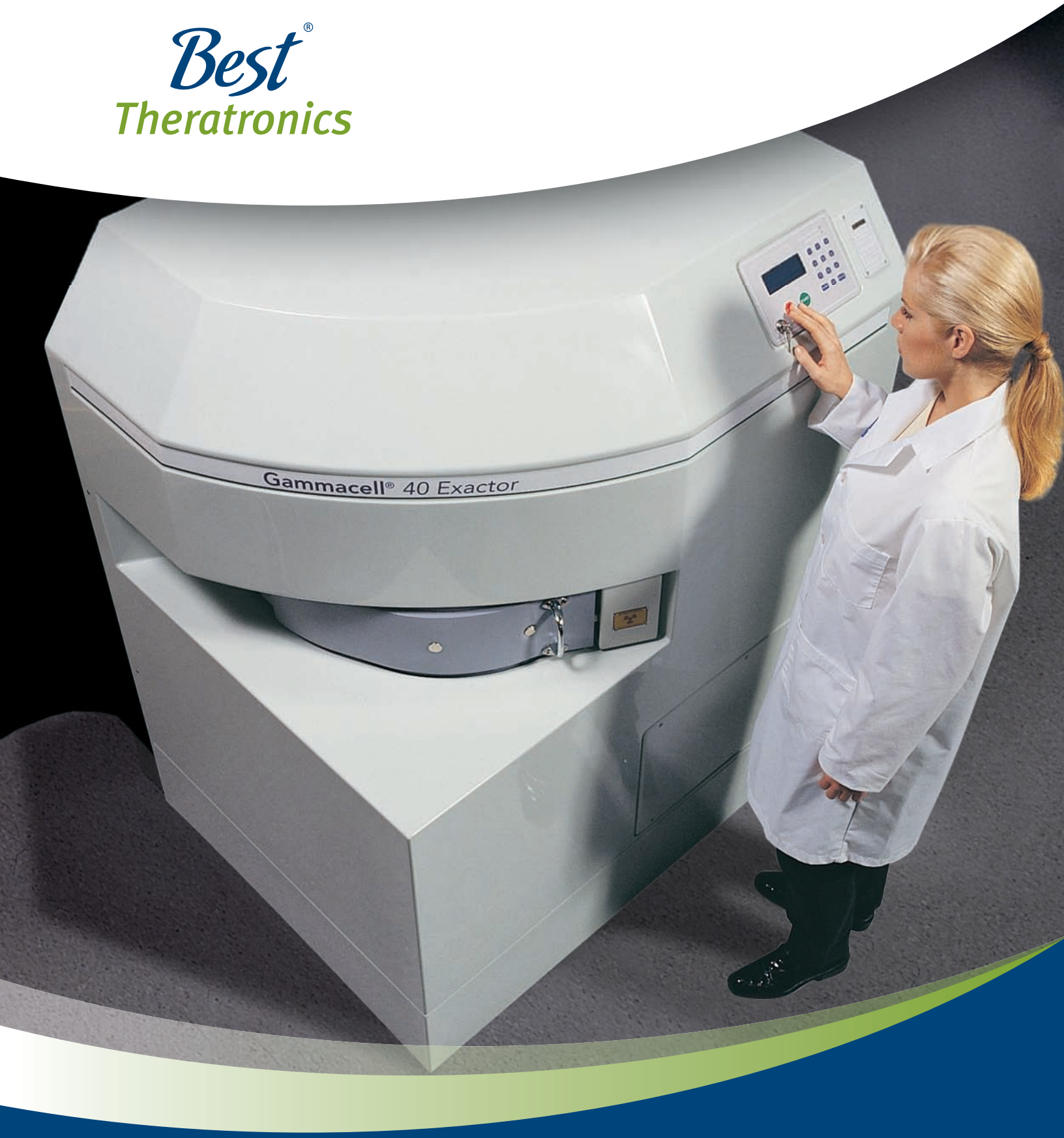
Best Theratronics



Gammacell® 40 Exactor

Low Dose-Rate Research Irradiator

Unrivalled Precision and Versatility

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The Gammacell® 40 Exactor, with its state-of-the-art control system, is engineered to give precise results. Timer settings can be chosen in increments of 1 second up to 100 hours, and the control system allows manual or automatic operation. Dose uniformity is ensured through the use of two Caesium-137 sources and an electric drive mechanism which provides accurate results regardless of where specimens are placed in the large sample container.

A Research Tool by Design

Research environments demand execution of protocols to exacting standards and replication of work with unfailing accuracy. The Gammacell® 40 is designed and engineered to meet these research environment requirements.

The Gammacell® 40 has a wide range of applications in radioimmunology, radiosensitivity and cell biology. It is ideal for the irradiation of mitotically inactive cell culture media, mixed lymphocyte cultures and cellular blood components.

The Gammacell® 40 also has a large ventilated sample container which makes it an excellent research tool for the development of murine models for cancer therapy.

Accessories

Collimator – Upper and lower lead shields reduce the central dose rate by approximately 95%. 6 holes of 3 cm diameter each are arranged in each shield to allow unattenuated beams of radiation to coincide at 6 points.

Attenuator – A set of 3 attenuators can reduce the central dose rate by approximately 33%, 60% or 80% respectively.

Advanced Design

- Redundant systems monitor the essential irradiation parameters, time and position of sources.
- Modular design makes parts replacement easy and maintenance hassle-free.
- Large volume chamber swings out from the unit, making it convenient to load and unload. Control system provides web browser (Ethernet) access to monitor system status and cycle history database.

Dose Rate and Radiation Specifications:

- Central dose rate of approximately 1.0 Gy/minute (100 rad/minute)
- Each of the two special form Caesium-137 sources has a nominal activity of 55.5 TBq (1500 Ci). Together they produce a central dose rate of 1.0 Gy/minute (100 rad/minute) ±15% in the sample container.
- Typical dose uniformity is ±7% over a 260 mm (10.2 in) diameter and a 100 mm (3.9 in) height. Best® Theratronics offers comprehensive dose mapping of the sample container upon request (see Figure 1).

Technical Specifications	
Weight	2994 kg (6,600 lbs)
Floor Loading	2715 kg/m^2 (540 lbs/sq ft)
Radiation Source	Caesium^{137}
Unit Dimensions	Height 1496 mm (58.9 in)
	Width 924 mm (36.4 in)
	Depth 1229 mm (48.4 in)
Initial Nominal Activity	3000 Ci
Central Dose Rate (±15% empty)	1.0 Gy/minute
Canister Dimensions (internal)	Height 105 mm (4.1 in)
	Diameter 312 mm (12.3 in)
	Volume 8.0 L (488 cu in)
Utility Requirements	Single phase with ground: 100 V, 50 or 60 Hz , 300 VA 115 V, 60 Hz, 300 VA 230 V, 50 Hz, 300 VA
Dose Uniformity (typical)	±7% over a 260 mm (10.14 in) diameter and a 100 mm (3.9 in) height
Battery Back-up	Yes

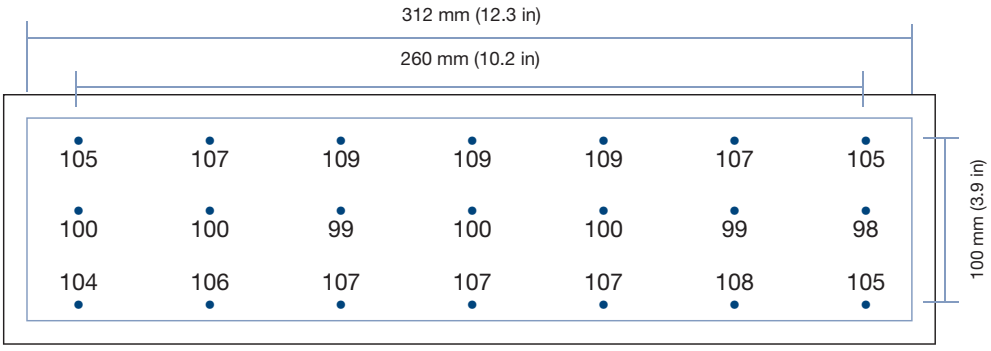

Figure 1: Typical Absorbed-Dose Distribution

(All values in percent are relative to the central dose.)

Superior Performance

- Excellent dose uniformityTypical maximum to minimum ratio is 1.14 in a container 260 mm (10.2 in) diameter and 100 mm (3.9 in) height. The central dose rate is 1.0 Gy/minute ±15%.

Accurate Results

- Achieved with state-of-the-art microprocessor control and dependable electric drive.

Safe to Use

- Safe in any conventional laboratory environment. Characteristic Best® Theratronics' measurements indicate 6 µSv/h (0.6 mrem/h) at 1 metre from the source and 20 µSv/h (2 mrem/h) at 5 cm from any surface of the unit.

Easy to Operate

- Equipped with a multi-line display screen and user-friendly instructions. The control panel gives current status and guides initial set-up as well as offering varying levels of security based on operator identification and PIN access.

Automatic Logging

- Irradiation cycle data is automatically logged in a database. This database can be viewed and saved via web browser access. Alternatively, a printer can be connected to record cycle data.

Added Security

- Restricts access to the control system's programming function, with security passwords and a keypad controlled by a key lock.

Battery Back-up

- Internal battery provides back-up in event of AC power failure.

Healthcare For Everyone

Best® Theratronics' products and services are used throughout the world to prevent, diagnose and treat disease. Our applied research and innovation play an integral part in improving global healthcare.

"Our TeamBest® companies are committed to making quality healthcare affordable and accessible globally."

Krishnan Suthanthiran
President, Best Medical International

Best® Theratronics Ltd. is a member of TeamBest®
– a family of Best® Medical companies.

From brachytherapy seeds and equipment, dosimetry kits, phantoms, treatment planning systems, an array of medical/health physics equipment, and product remanufacturing/servicing, to radioactive sources, gamma teletherapy machines, cyclotron systems, and particle therapy treatment, TeamBest® has it all!

Check out each company's site at www.teambest.com

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