Technical Specifications

Gammacell® 40 Exactor

Low Dose-Rate Research Irradiator

Unrivalled Precision and Versatility

The Gammacell® 40 Exactor Low Dose-Rate Research Irradiator is used in labs throughout the world to explore elements of cell biology and advance the scientific study of various areas of cancer and stem cell research.

Shipping

The Gammacell® 40 Exactor is shipped in three parts:

- Two radioactive materials (RAM) packages contain the radiation shield assembly and the Caesium-137 sources which meet international transportation and safety regulations.
- The third package contains the cabinet, control system and related parts.

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®40.

Customer Requirements

Customers need to obtain a radioactive materials possession license (or equivalent) before the Gammacell® 40 Exactor can be shipped. Best® Theratronics helps prepare license submission documents required for radioactive materials possession. When applying for a license, customers should quote 4000 curies.

Quality and Safety Standards

All units are manufactured to comply with the American National Standards Institute, ANSI N433.1 Requirements for Safe Design and Use of Self-Contained Dry Source Gamma Irradiators. Best® Theratronics is ISO 9001 and ISO13485 certified.

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
• Ethernet (web browser) access for electronic record keeping

Irradiator Details

Installed Weight	2994 kg (6,600 lb.)
Height	1496 mm (58.9 in.)
Width	924 mm (36.4 in.)
Length	1229 mm (48.4 in.)
Floor Loading Area	1.13 m^2 (12.2 sq. ft.)
Floor Loading	2715 kg/m^2 (540 lb./sq. ft.)
Power	100, 115, or 230 Hz
	VAC; 50/60 Hz; 0.3kVA, with Ground connection
	VAC 50/60 Hz with ground
Dose Uniformity (typical)	± 7% over a 260 mm (10.14 in.) diameter and
	a 100 mm (3.9 in.) height

Sample Container

Height (internal)	105 mm (4.1 in.)
Diameter (internal)	312 mm (12.3 in.)
Volume	8.0 L (486 cu. in.)

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Best® healthcare for everyone

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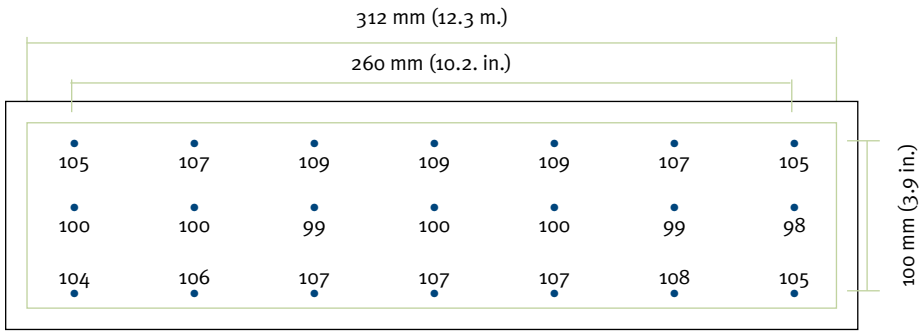
Source Activity and Central Dose Rate

	Nominal Source Activity		Central Dose Rate ± 15%	
Number of Sources	TBq	(Ci)	Gy/min	(rad/min)
2	122.2	(3300)	1.1	(110)

Typical Absorbed-Dose Distribution

(all values in percent are relative to the dose at the geometric centre of the chamber)



Note: There will be slight variations in uniformity from unit to unit.

Gammacell® 40 with Printer

A minimum ceiling height of eight feet is required for assembling the unit. More height may be needed depending on the type of rigging equipment used. Minimum distances from the unit to surrounding walls or other equipment for operation and maintenance are as follows:

- 48 inches from the front of the unit to allow room for removing the front cover for maintenance. The keypad is located on the front cover, right-hand corner (see Figure 3).
- 20 inches from the left side of the unit to allow clearance for the sample chamber door to swing open.
- 12 inches from the right side of the unit. The ventilation opening is located on the right side.
- At least 6 inches from the back of the unit.

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Notes

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