

Gammacell[®]

40 *Extractor*



Low Dose-Rate Research Irradiator





A Research Tool by Design

Gammacell 40 Exactor

In a research environment, the ability to execute protocols to exacting standards, and then replicate the work with unflinching accuracy is paramount. It is equally important to have a tool capable of performing a variety of applications.

The Gammacell 40 is designed and engineered for the research environment to meet both of these requirements.

Versatility

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

It is an excellent research tool for the development of murine models for cancer therapy with a large sample container which may be ventilated.

Accuracy

The Gammacell 40 has a state-of-the-art control system, engineered to give precise results. The unit can be programmed with unrivalled precision.

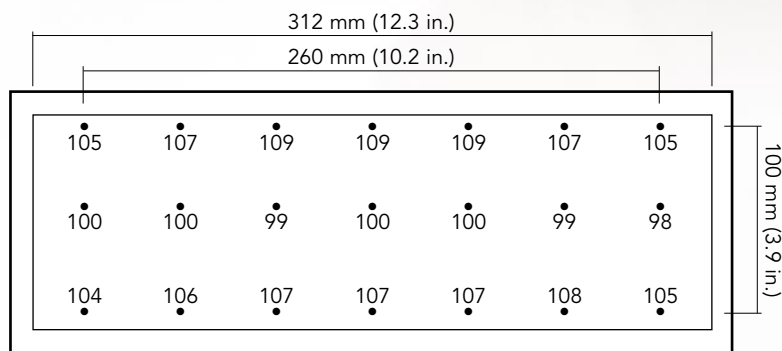
Dose uniformity is ensured through the use of two caesium¹³⁷ sources and an intelligent microprocessor control system teamed with a dependable electric drive mechanism. This allows for accurate results regardless of where specimens are placed in the large sample container.

The timer setting can be set in increments of one second up to 100 hours; and the control system allows manual or automatic operation.

Dose Rate and Radiation Specifications:

- Central dose rate of approximately 1.30 Gy/minute (130 rad/minute).
- Each of the two special form caesium sources has a nominal activity of 66.6 TBq (1800 Ci). Together they produce a central dose rate of 1.30 Gy/minute (130 rad/minute) \pm 15% in the sample container.
- Typical dose uniformity is \pm 7% over a 260 mm (10.2 in.) diameter and a 100 mm (3.9 in.) height.
- MDS Nordion offers comprehensive dose mapping of the sample container upon request.

The Gammacell 40 can be connected to a printer to record irradiation data after completion of each cycle. This allows for automatic logging of irradiation cycles.



Typical Absorbed-Dose Distribution

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



Collimator



Attenuator

Versatile and accurate, the *Exactor* is built for the research environment.

Advanced Design

- Redundant systems monitor the essential irradiation parameters, time and position of sources.
- Modular design makes parts replacement easy, and maintenance hassle-free.
- Two caesium¹³⁷ sources are driven by an electric ball screw system eliminating the need for a compressor.
- Independent back-up timer.
- Large volume chamber swings out from the unit making it convenient to load and unload.



Superior Performance with excellent dose uniformity (typical maximum to minimum ratio is 1.14 in a container 260 mm (10.2 in.) in diameter and 100 mm (3.9 in.) in height). The central dose rate is 1.30 Gy/minute \pm 15%.

Accurate Results are achieved with a state-of-the-art microprocessor control and dependable electric drive.

Safe to Use in any conventional laboratory environment. Characteristic MDS Nordion measurements indicate 3 μ Sv/h (0.3 mrem/h) at 1 metre from the source and 50 μ Sv/h (5 mrem/h) at 5 cm from any surface of the unit.

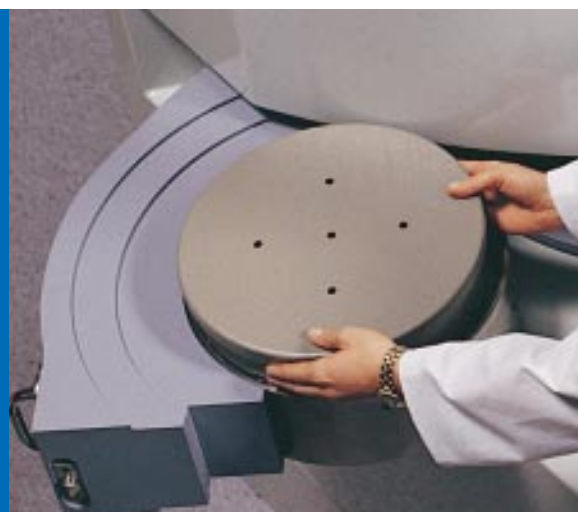
Easy to Operate with a multi-line display screen and user-friendly instructions. The control panel gives current status and guides initial set-up as well as offering varying levels of security based on operator identification and PIN access.

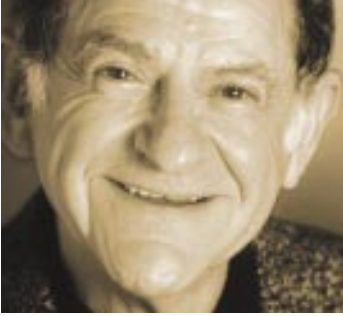
Added Security restricts access to the control system's programming function, with security passwords and a keypad controlled by a key lock.

Accessories

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

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





Unwavering Commitment to Quality



- MDS Nordion Sales and Service Locations
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