

# Best<sup>®</sup> Theratronics



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Best<sup>®</sup>

healthcare for everyone

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# Raycell® Mk2 X-ray Irradiator

## New! Raycell® Mk2 X-ray Irradiator



The Raycell® Mk2 is the newest generation of X-ray based blood irradiators. Used in blood bank centers, clinics and laboratories, the Raycell® Mk2 model features a larger chamber for irradiation of more blood bags, a barcode scanning system linked to an Irradiated Products Data Management (IPDM) System, and the latest computer-based features to ensure efficient, error-free operation. In addition, the Raycell® Mk2 has enhanced trouble-shooting and repair features.

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# Raycell<sup>®</sup> Mk2 X-ray Irradiator

## State of the Art – The New Wave in Blood Irradiators

Delivering the required dose to blood products, the next generation Raycell<sup>®</sup> X-ray Blood Irradiator helps to prevent TA-GVHD for patients at risk. Efficient, convenient and user friendly, Raycell<sup>®</sup> Mk2 provides a safe and cost-effective new choice for blood irradiation backed by Best<sup>®</sup> Theratronics' trusted expertise and commitment to quality.

- Radiation dose is delivered by two X-ray tubes opposing each other, with the sample container located centrally between them
- Blood bags intended for irradiation are loaded into a cylindrical container and the container is loaded into its “port” in a drawer which slides out of the irradiator
- Radiation dose delivered to the samples is controlled by setting and monitoring irradiation time, based on a known central dose rate for the unit
- Detailed dosimetry of the sample chamber volume is performed during installation and a report is provided to the customer
- Irradiation time is controlled by two independent microprocessors
- When used with the IPDM (Irradiated Products Data Management) System, an additional third verification of the irradiation time is performed by that system
- When used with the IPDM System, barcoded information about irradiated blood products can be scanned and stored in the database, together with information about the irradiation cycle itself, operator performing the irradiation, date and time stamp, etc.

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# Raycell® IPDM System

## Irradiated Products Data Manager (optional)

The optional Raycell® IPDM system allows for scanning of product information before performing an irradiation cycle and stores it on a computer. After completion of each irradiation the operator enters information about the completed cycle and confirms proper identification of radiation sensitive tags.

The Raycell® IPDM System is intended to provide elements of “digital traceability” for Raycell® Irradiators manufactured by Best® Theratronics. Mounted on the Raycell® Mk2 unit, it is a stand-alone system which allows for electronic storage and management of information about blood products irradiated with the Raycell® Mk2.

### The IPDM System consists of the following components:

- IPDM Software (supplied by Best® Theratronics)
- Barcode Reader (supplied by Best® Theratronics)
- Personal Computer (supplied by Best® Theratronics)



Barcode Reader



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# Gammacell<sup>®</sup> 1000 Elite / 3000 Elan

## The Gammacell<sup>®</sup> 1000 Elite / 3000 Elan



Both machines have been refined with the valuable input of clinicians over many years, and the result is a very user friendly control system. Each machine has numerous safety measures incorporated into the operating system to maintain accuracy and reliability.

Primarily used for blood irradiation, the Gammacell<sup>®</sup> 1000 and 3000 are considered the “gold standard” in countless clinics throughout the world. Both machines have a highly developed user interface with various input devices, including keyboards and barcode scanners.

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# Gammacell<sup>®</sup> 1000 Elite / 3000 Elan

## Advanced Design Features

- Ergonomic design for easy loading and unloading of blood bags
- Able to scan key barcoded parameters from the blood bag (including RadTag™ indicators)
- Caesium-137 is double encapsulated in stainless steel
- Ethernet (web browser) access and LIMS interface provide digital traceability options for blood products

## Quality Assurance

- An advanced monitoring and control system tracks the irradiation process, confirming canister rotation, irradiation time and product position.

## Easy to Operate

- A multi-line, menu-driven display screen, with step-by-step instructions, will continue to operate for multiple cycles even in a power outage.



## Safe to Use

- For use in any conventional hospital, clinic or laboratory environment.

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# Specifications

## FEATURES SUMMARY FOR RAYCELL & GAMMACELL BLOOD IRRADIATORS

Product	Canister Volume	# Blood Bags at one time *	Irradiation Source	Unit Dimensions
Raycell Model Mk2	3.1 Liters (189 cu. in.)	8 bags of 300 ml 5–6 bags of 450 ml 4 bags of 600 ml in approx. 5 minutes**	Two X-ray Tubes	152 cm (60 in.) high 150 cm (59 in.) wide 102 cm (40 in.) deep
Raycell Model CE	1.5 Liters (91 cu. in.)	2–3 of 300 ml in approx. 5 minutes**	Two X-ray Tubes	151 cm (59.5 in.) high 114 cm (44.6 in.) wide 56 cm (21.7 in.) deep
Gammacell 3000 Elan Model I	2.34 Liters (143 cu. in.)	3–4 bags of 300 ml in approx. 5 minutes**	One Caesium-137 source (~53.7 TBq)	155 cm (61 in.) high 80 cm (31.5 in.) wide 104 cm (41 in.) deep
Gammacell 3000 Elan Model II	2.34 Liters (143 cu. in.)	3–4 bags of 300 ml in approx. 2.56 minutes**	Two Caesium-137 sources (~107.4 TBq)	155 cm (61 in.) high 80 cm (31.5 in.) wide 104 cm (41 in.) deep
Gammacell 1000 Elite Model A	824 milliliters (50 cu. in.)	1 bag of 300 ml in approx. 7.14 minutes**	One Caesium-137 source (~21.3 TBq)	155 cm (61 in.) high 80 cm (31.5 in.) wide 104 cm (41 in.) deep
Gammacell 1000 Elite Model I	824 milliliters (50 cu. in.)	1 bag of 300 ml in approx. 2.94 minutes**	One Caesium-137 source (~53.7 TBq)	155 cm (61 in.) high 80 cm (31.5 in.) wide 104 cm (41 in.) deep
Gammacell 1000 Elite Model II	824 milliliters (50 cu. in.)	1 bag of 300 ml in approx. 1.56 minutes**	Two Caesium-137 sources (~107.4 TBq)	155 cm (61 in.) high 80 cm (31.5 in.) wide 104 cm (41 in.) deep

\* Estimated number of blood bags that will fit in the canister and can be irradiated at the same time

\*\* Estimated timer setting for 25 Gy Central Dose Rate

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# Raycell® CE X-ray Blood Irradiator

## Raycell® CE X-ray Blood Irradiator



The Raycell® CE X-ray Blood Irradiator is an ideal alternative for smaller facilities with on-site blood processing requirements.

The Raycell® CE X-ray Blood Irradiator provides a safe and cost-effective choice for blood irradiation.

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# Raycell® CE X-ray Blood Irradiator



## Outstanding Built-in Benefits

- Delivers a 25 Gy dose in about five minutes
- Excellent throughput — two to three blood bags in just five minutes
- No need for Radiation Safety Officer on staff in most US states
- Easy to install
- Simple operation
- Compact and lightweight
- Minimal training required

## Options

- Service agreements
- RadTag™ irradiation indicators
- Additional canisters

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# Gammacell<sup>®</sup> 40 Exactor

## The Gammacell<sup>®</sup> 40 Exactor

### Research Tool by Design

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

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.



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# Gammacell<sup>®</sup> 40 Exactor

## Gammacell<sup>®</sup> 40 Exactor Technical Specifications

### Irradiator Details

Installed Weight	2994 kg (6,600 lbs.)
Height	149.6 cm (58.9 in.)
Length	122.9 cm (48.4 in.)
Dose Uniformity (typical)	VAC 50/60 Hz with ground +/- 7% over a 260 mm (10.14 in.) diameter and a 100 mm (3.9 in.) height

### Sample Container

Height (internal)	10.4 cm (4.1 in.)
Diameter (internal)	31.2 cm (12.3 in.)
Volume	8.0 L (486 cu. in.)

### Source Activity and Central Dose Rate

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