Raycell® Mk2
X-ray Blood Irradiator
2.0 L or 4.8 L Canisters
A Convenient Choice for Blood Irradiation

Efficient, convenient and user friendly, the Raycell® Mk2 X-ray Blood Irradiator provides a safe and cost-effective choice for blood irradiation — backed by Best® Theratronics’ trusted expertise and commitment to quality. It delivers the required dose to help prevent TA-GVHD.

Raycell® Mk2 Features

• Larger canister size facilitates irradiating more blood bags — 2.0 L and 4.8 L (0.53 and 1.27 US Gallons)

• Two opposing x-ray tubes deliver a uniform dose to the product

• Dose delivery is controlled by setting and monitoring the irradiation time, based on the central dose rate

• Irradiation time is controlled by two independent microprocessors

• Detailed dosimetry of the sample canister volume is obtained and provided at the time of installation

• Installation can take 1–3 days depending on individual installation and training requirements
# Technical Specifications

**Weight**
1,000 kg (2200 lbs)

**Floor Point Loading**
111 kg/cm² (1580 lbs/in²)

**Dimensions**
- Height: 1525 mm (60 in)
- Width: 1450 mm (57 in)
- Depth with Shelf: 1000 mm (40 in)
- Depth without Shelf: 800 mm (32 in)

**Electricity Requirements**
- Single-phase 60 Hz, 60A typically at 240V
- Three-phase 50 Hz, 25A typically at 400V

**Photon Energy**
- 160 KV (60-80 keV average)

**Water Requirements**
* Not applicable if Self-Contained Cooling System option is selected.
- Flow Rate: >10 L/min (2.6 US gal/min)
- Potable Quality: ≤ 7 grains/US gal hardness
- Pressure: 35-60 psi (241-414 kPa)
- Temperature: 10-25 °C (50-77 °F)

## Canister Features

<table>
<thead>
<tr>
<th>Canister Features</th>
<th>2.0 L Version (0.53 US gal)</th>
<th>4.8 L Version (1.27 US gal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canister Diameter</td>
<td>167 mm (6.6 in)</td>
<td>240.5 mm (9.5 in)</td>
</tr>
<tr>
<td>Canister Height</td>
<td>97 mm (3.8 in)</td>
<td>119.5 mm (4.7 in)</td>
</tr>
<tr>
<td>Estimated Number of Bags per Cycle</td>
<td>4 Bags (300 ml each) or 2 Bags (600 ml each)</td>
<td>6 Bags (300 ml each)</td>
</tr>
<tr>
<td>Central Dose Rate</td>
<td>12.3 Gy/min (± 5%)</td>
<td>5.8 Gy/min (± 5%)</td>
</tr>
<tr>
<td>Time for 25 Gy Central Dose</td>
<td>~ 2.0 min</td>
<td>~ 5 min</td>
</tr>
<tr>
<td>Dose Uniformity</td>
<td>~ 20 to 30 Gy (1.5:1)</td>
<td>~ 21.4 – 35.3 Gy (1.65:1)</td>
</tr>
<tr>
<td>Time for 25 Gy Minimum Dose</td>
<td>~ 3.2 min</td>
<td>~ 6 min</td>
</tr>
<tr>
<td>Dose Uniformity</td>
<td>~ 25 to 37.5 Gy (1.5:1)</td>
<td>~ 27.3 to 45.5 Gy (1.65:1)</td>
</tr>
</tbody>
</table>

**Additional Options**
- IPDM System
- Self-Contained Cooling System
- Heat Exchanger
- Syringe Holder
- UPS
- Service Agreements
- Irradiator Verification Indicators
- Additional Canisters
- Chiller
IPDM System

Irradiated Products Database Management (IPDM) System Features (Optional)

- Scans and stores bar-coded information about the irradiated product (unit number, product code, blood type, etc.), irradiation cycle number, operator details, date/time stamp, and irradiation indicator verification
- Scans barcodes using ISBT 128\(^1\) and ABC Codabar\(^2\) decoders, or as is without decoding
- Includes three modes of operation: product entry, cycle database review, and administration
- Performs additional verification of the irradiation time
- Stores up to 50,000 product entries of data in main database and archives the rest
- Exports data conveniently onto a USB memory stick (1 stick provided, 2 USB ports)
- Ensures efficient, error-free operation

2. ABC Codabar: Based on the US FDA “Guideline for the Uniform Labelling of Blood and Blood Components” – August 1985
Syringe Holder (Optional)
- Accommodates a 60 ml syringe
- Same irradiation time as blood bags
- Special modified canister
- Custom dosimetry report

Self-Contained Cooling System (Optional)
- 35 L tank for distilled water
- No connection to external water needed
- System has its own power requirements (100–240 V single phase)
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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