The RS 3400 Blood Irradiator



The Premier X-Ray Blood Irradiator in the World Providing Superior Dose Uniformity, Productivity and Industry Leading Reliability

blood

Highest Product Throughput & Flexibility
Processes a variety of blood configurations of up to 6L capacity in 5 minutes - whole blood bags, platelet bags and loaded syringes in the same cycle

Excellent Dose Uniformity
The combination of the patented Quastar® x-ray emitter, rotating carousel and canister may achieve a DUR as low as ~1.35.

Direct Replacement for Gamma Irradiator
U.S. Government recognized safe, direct alternative for radioactive isotope (gamma) irradiator.

Unmatched Service & Support Footprint
With more than **800** irradiator installs in renowned hospitals, universities, pharma, government and life science institutions worldwide, Rad Source is a proven and reliable x-ray manufacturer with unmatched and trusted services.

*CE marked

The RS 3400 Blood Irradiator

X-Ray Designed for Life Science

The RS 3400 is a registered medical device with a US FDA 510(k). It is produced and tested in Rad Source's Buford, Georgia, USA facility. Rad Source products conform to the radiation safety guidelines found In 21 CFR 1020.40.

Radiation safety features of the RS 3400 include redundant safety interlocks to prevent intrusion into the radiation chamber while in operation. The unit is a Cabinet X-Ray Device that has external emissions far below the federal standard for such devices.

Features and Benefits

- Patented Quastar x-ray emitter (Patent # 7346147)
- Dose Uniformity of ~1.6 to ~1.35 when using Support Inserts
- Cycle time for 25Gy center dose is less than 5 minutes
- Patented carousel rotator uniquely rotates canisters around source w/out rotating contents. (Patent # 7515686)
- Holds up to six 1 L canisters (dimensions on next page)
- Can process blood bags, platelet bags, and drawn syringes of up to 60 mL (e.g. aliquots) in the same cycle.
- Runs single power supply - runs at less than 2 kW.
- Repairable x-ray emitter source operates up to 7 years
- Smallest irradiator footprint - 34 x 36" (86.36 x 91.44 cm)
- Onboard cooling system - no water hook-up required

Direct Cesium Replacement

- No Nuclear Regulatory Commission (NRC) License required
- No nuclear disposal requirements
- No additional safety equipment for laboratory staff
- No additional security requirements

Certification

- US-FDA cleared, CE marked, and CB Scheme certified



Rad Source in Action

We pioneered the first FDA-cleared blood x-ray irradiation medical device used to prevent the highly fatal transfusion-associated graft-versus-host disease (TA-GVHD) in blood transfusion recipients.

Blood transfusion is a lifesaving procedure for people who are bleeding and people who cannot make a sufficient amount of blood on their own. A rare but almost always fatal complication from blood transfusion is called transfusion-associated graft-versus-host disease (TA-GVHD), where immune cells from the donor blood attack the recipient's organs and cause a deadly infection that is nearly impossible to fight off.

Started over 20 years ago, we pioneered the first-ever FDA-cleared blood x-ray irradiation medical device used to prevent TA-GVHD, and today with over 250 worldwide installations, we have maintained our status as the industry leader and gold-standard in blood irradiation technology and instrumentation ever since.

Our patented x-ray irradiation technology effectively and routinely inactivates the immune cells in donor blood, which diminishes the risk of developing TA-GVHD for the transfusion recipient.





RS# 1402055

CARBON FIBER CANISTER

Highest Flexibility and Capacity on the Market

Blood Bags
- 6 x 600 mL bags
- 6 x 500 mL bags
- 12 x 250 mL bags per
- Can be run in cycle with syringes and platelet bags

Platelet Bags
- 6 x 600 mL bags
- 6 x 500 mL bags
- 12 x 250 mL bags per
- Can be run in cycle with syringes and blood bags

Drawn Syringes
- (3) 30 mL or 60 mL drawn syringes per canister
- Up to 18 total syringes per cycle
- Can be run in cycle with blood and platelet bags

SYRINGE HOLDER

- Holds fully drawn syringes.
- Two (2) Syringe Holders are supplied with the unit.
  * Syringe Holders are available to purchase separately.
  * Syringes must have Leur Lock Caps.
  * Syringe holders do not work with a sterile dock system.



RS# 3400-09401



RS# PHANTOM

** INTERNATIONAL AVAILABILITY ONLY **

DOSE MAPPING PHANTOM

- A Dose Mapping Phantom is a cylindrical device placed into one of the canister holders to simulate a canister full of blood.
- Thermoluminescent dosimeters (TLDs) are placed in the phantom to measure the dose.
- A Phantom is required to perform commissioning and routine dosimetry.



TECHNICAL SPECIFICATIONS

PHYSICAL DIMENSIONS

EQUIPMENT DIMENSIONS
34 x 33 x 67.75" | 86 x 84.6 x 173. 35 cm

CRATED DIMENSIONS
38 x 37 x 75" | 96.52 x 101.60 x 1 90.50 cm

EQUIPMENT WEIGHT
1750 lbs. | 794 kg

ELECTRICAL REQUIREMENTS

POWER
208/240VAC, Single phase, 50/60Hz, 30 Amp, grounded

INSTRUMENT WIRING
10 AWG L1, L2/N

SAFETY & QUALITY

All Rad Source irradiators receive a quality inspection, dose map, and radiation survey prior to shipment and again at installation.

All Rad Source irradiators are manufactured as cabinet x-ray devices and conform to the radiation safety guidelines in US CFR 1020.40

IRRADIATION GUIDELINE

USA (FDA)
15 Gy min/25 Gy central/5O Gy max

EUROPE (EDQM) & UK (BCSH)
25 Gy min/50 Gy max dose rate: 5.5 - 6.5 Gy/min

PROCESSING

DOSE UNIFORMITY RATIO (DUR)
Dose Uniformity of 1.6 to ~ 1.35

PROCESSING VOLUME / CYCLE
Blood Bags - Up to (6) 600 mL bags
Platelet Bags - Up to (6) 500 mL bags
Drawn Syringes – Up to (18) 60 mL syringes

WARRANTY

DOSE MAPPING
the RS 3400 is dose mapped prior to shipment and at the time of installation.

12 MONTH FULL WARRANTY
Includes Installation, Training, Initial Dose Map, Radiation Survey, 2nd Dose Map and all parts, labor and travel.

EXTENDED WARRANTY PROGRAM
Available for purchase anytime within 12 months from date of installation.

radsource.com/products/rs-3400-blood-irradiator/

POWERED BY QUASTAR

X-Ray Designed for Life Science™

Rad Source is a global leader in developing x-ray solutions for life science. Our mission is to develop innovative x-ray technologies that enable our customers to improve the world through life science innovation.

Whether our customers are doing cancer and cell research, solving life's most challenging issues or preventing the spread of infectious diseases, we are here to support them. Our global network of employees and partners deliver an unrivaled combination of the world’s most innovative x-ray-based life science solutions and a highly trained and responsive global service and support footprint.

RAD SOURCE