

The RS 2400•Q Sterile Insect Irradiator



Is Non-GMO Sterile Insect Technique (SIT) right for you?

Family Planning for Insects™

Environmentally Friendly Insect Control

Clean, renewable energy to sterilize mass-reared insects, they remain sexually competitive yet cannot produce offspring, SIT does not involve genetic engineering.

Patented Carousel Circulation Technology

High capacity, single chamber design with integrated multi-canister carousel technology for maximum throughput.

Lower Cost of Ownership than Gamma

Hassle Free Ownership, NO decay curve calculation, NO need for secure or shielded room, NO nuclear site license required, NO added safety costs.

*RS 2400 is CE marked

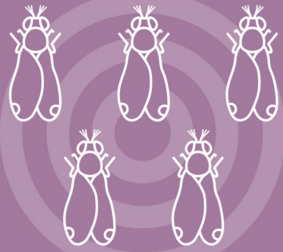
The Premier Insect X-ray
Irradiator in the World
Providing Superior
Uniformity and Industry
Leading Reliability

insect

What is Sterile Insect Technique?

Mass Rearing

Targets are mass-reared in an insectary

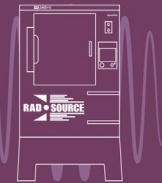


SORTING

Insect separated by sex
and males are chosen



Males are typically non-biting,
or are non-damaging to crops



Sterilization

Separated males are sterilized using ionizing radiation

Males rendered infertile
Insects are not radioactive

Mass Release

Sterilized males mate with the wild females,
eggs do not hatch



Sterilize males released in large
quantities over a defined area



Rad Source in Action

Our patented x-ray irradiation technology is scientifically proven to deplete harmful pests to prevent disease, restore prosperity to the agricultural industry, and improve the health and wellbeing of the human population.

Pests are harmful to both the agricultural industry and human health. Rapid reproduction and population growth of these pests results in agricultural losses in crops and livestock, economic damage, and un-controlled spread of harmful pathogens called vector-borne diseases. These diseases are carried by certain blood-feeding organisms such as mosquitoes and transmitted to humans through their bites.

One method that is used to eliminate pests is called sterile insect technique (SIT). SIT uses radiation to mass-sterilize male pests in a population, and these males are unable to produce offspring when mating with females. SIT has been successfully used to control invasive insect pests since the 1940's.

Rad Source designs & manufactures cost-efficient and safe x-ray instruments specifically designed for SIT, reducing the burden of pests and vector-borne diseases.



RS 2400•Q Sterile Insect Irradiator

X-Ray Designed for Life Science™



Rad Source family of sterile insect irradiators are an environmentally-friendly pest management method - population of insects is controlled by releasing sterile males in a targeted area.

Successfully used for over 70 years and currently applied in over 6 continents worldwide to protect areas against invasion and re-invasion.

The RS 2400•Q Biological Irradiator was developed as a Cesium-137 replacement device for the research irradiation of small animals, cells, tissue, insects and more.

Patented QUASTAR® Emitter

Maximizes Dose Uniformity > 98%

RS 2400•Q Patented Carousel Circulation Technology

High capacity, single chamber design with an integrated multi-canister carousel technology for maximum throughput.

Holds (6) 830 mL canisters for 5L processing volume.

- 4" in diameter (10.2 cm)
- Dose Rate is 12 Gy/min.

Holds (5) 3L canisters for 15L processing volume.

- 7" in diameter (17.7 cm)
- Dose Rate is 10 Gy/min.

RS 2400•Q Bugs/Cycle Estimates

MexFly:

- 100,000 pupae (RS 2400•Q4)
- 300,000 pupae (RS 2400•Q)

MedFly:

- 300,000 pupae (RS 2400•Q4)
- 900,000 pupae (RS 2400•Q)

LBAM & NOW:

- 800,000 adult moths (RS 2400•Q4)
- 2,000,000 adult moths (RS 2400•Q)

Repairable Energy Source - Low Cost of Ownership

Engineered to be repairable, lowers overall cost of ownership. (standard imaging tube x-ray sources require full replacement).

One Day Plug & Play Installation

Equipment delivery and training in one day at the facility is all that is needed. Simple, hassle-free ownership.



Codling Moth (*Cydia pomonella*)

One of the worst moth species, have been known to damage anywhere from 20-25% of fruit orchards.



Direct Replacement for Nuclear Source Irradiators

Considered by FDA to be "substantially equivalent" to Cesium-137 gamma irradiators for the irradiation of blood and blood products.

No Radioactive Source – No Ongoing Regulatory Hassles

- No Nuclear Regulatory Commission (NRC) License required.
- No nuclear disposal requirements.
- No additional security requirements.
- No additional safety equipment for laboratory staff.
- Meets Fed. Reg. 21 CFR 1020.40. safety requirements.

Instrument Portability

Mounted on sturdy castor wheels for convenient portability, allowing for flexible placement for improved workflow efficiency.

Proven Reliability

For over 20 years and greater than 800 irradiator installs in renowned hospitals, universities, pharma, government and life science institutions worldwide, Rad Source has provided the world's leading healthcare providers with reliable products and trusted services.



DID YOU KNOW



99.9% of pesticides used are absorbed into the environment and contaminate soil & adversely affect human & animal health.



RS 1800 • Q4

Power: 4000W
Dose Rate (Gy/min): 20 Gy/min. (0.46 g/mL)
Dose Uniformity Ratio (DUR): 1.3-1.5

Processing Volume:
 Please contact our in-house entomologist as uniform dose rates are bug dependent - can do several thousand moths, mosquitoes, or flies at a time but contact our entomologist to find out more.

Dimensions
 30"W x 36"D x 64"H

Weight
 1,350 lbs.

Electrical
 208/240VAC, Single phase, 50/60Hz, 40 Amp, True Earth Ground.
 Instrument Wiring: 8 AWG L1, L2/N.



RS 2400 • Q

Power: 4000W
Dose Rate (Gy/min): 10-12 Gy/min. (0.46 g/mL)
Dose Uniformity Ratio (DUR): 1.3-1.5

Processing Volume:
 RS 2400•Q4: (6) 830 mL canisters with spacer (5L total capacity) per cycle.
 • 4" in diameter (10.2 cm)
 • Dose rate ~12 Gy / min, 1.3 DUR

RS 2400•Q: (5) 3L canisters (15L total capacity) per cycle.
 • 7" in diameter (17.7 cm)
 • Dose rate ~10 Gy / min, 1.6 DUR





Dimensions
 46"W x 36"D x 74"H

Weight
 2,450 lbs.

Electrical
 Power: 208/240VAC, Single phase, 50/60Hz, 40 Amp, True Earth Ground.
 Instrument Wiring: 8 AWG L1, L2/N



Irradiator Selection Guide

Model	Research	Production
RS 1800•Q4		
RS 2400•Q		

~\$700 million in losses for producers across the US annually, from one species - *Drosophila suzukii*



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 research and life saving innovation. Whether our customers are doing cell or cancer 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.



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