



Becquerel & Sievert

Your radiation safety and dose accuracy are our primary concern



We Innovate and Customize

cGMP Compliant Hot Cells

Automated Dispensing

Automated injection

Shielding accessory



The total solution for high efficiency and quantity production of radiopharmaceutical industry via automation and AI technology.

### F-18 production line



### I-131 production line



The total solution for high efficiency and quantity production of radiopharmaceutical industry via automation and AI technology.

### Lu-177/Ac-225 production line



### Solid Target production line



# Manipulator Hot Cell

Equipped with a pair of manipulators (MSM), the hot cell is engineered for the safe handling and processing of high-activity isotopes and radiopharmaceuticals. All operations are conducted within a validated Grade A (Class 100/ISO 5) environment to ensure full GMP compliance.



**Model: THC-75** (75/60 mm lead shielding)  
- Weight: 9500 kg (20943lbs)

**Model: THC-60** (60/50 mm lead shielding)  
- Weight: 8240 kg (18166lbs)

- External size: W 130 x D 130 x H 260 cm  
- Internal size: W 100 x D 80 x H 100 cm  
- Power: 220 V, 15 A



Smart Touch Control Panel

- ⊙ Primary working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation, external surfaces are SUS 304 stainless steel.
- ⊙ The front face is configured with 60mm to 75mm lead shielding; all other sides feature 50mm, 60mm or 75mm shielding options.
- ⊙ The laminar flow dispensing chamber includes HEPA filtration, ensuring air quality complies with Grade A (Class 100/ISO 5).
- ⊙ Innovative vacuum-seal technology ensures the inner containment door remains hermetically sealed.
- ⊙ An integrated touch control panel manages all operating functions, real-time monitoring and dose calibrator readings.
- ⊙ A hinged front door includes a high-density lead glass viewing window.
- ⊙ A pair of manipulators are equipped for handling and processing isotopes for radiopharmacy under Grade A conditions (optional).
- ⊙ Integrated product elevator allows for contamination-free transfer of materials and product into and out of the dispensing area.
- ⊙ A 50mm lead shielded housing for the dose calibrator is conveniently located below working level.
- ⊙ A GM detector measures the radioactivity level in the working chamber, an automated safety interlock prevents the doors from opening if radiation exceeds preset levels (optional).
- ⊙ Fully accommodates dispensing series: ADG-500, ADG-500s, MDV-20 and APDS.

# Tele-Tong Hot Cell

Equipped with dual tele-tongs for isotope and radiopharmaceutical processing within a Grade A (Class 100/ISO 5) environment, ensuring full GMP compliance.



**Model: TDHC-75** (75/60 mm lead shielding)

- Weight: 7600 kg (16755lbs)

**Model: TDHC-60** (60/50 mm lead shielding)

- Weight: 6300 kg (13889lbs)

- External size: W 120 x D 120 x H 240 cm

- Internal size: W 90 x D 80 x H 80 cm

- Power: 220 V, 15 A



Smart Touch Control Panel

- ⊙ Primary working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation, external surfaces are SUS 304 stainless steel.
- ⊙ The front door is configured with 60mm to 75mm lead shielding; all other sides feature 50mm, 60mm or 75mm shielding options.
- ⊙ The laminar flow dispensing chamber includes HEPA filtration, ensuring air quality complies with Grade A (Class 100/ISO 5).
- ⊙ Innovative vacuum-seal technology ensures the inner containment door remains hermetically sealed.
- ⊙ An integrated touch control panel manages all operating functions, real-time monitoring and dose calibrator readings.
- ⊙ Both the hinged doors and the secondary operation side feature high-clarity lead glass viewing windows.
- ⊙ Dual Tele-tongs enable precision manipulation within the dispensing area.
- ⊙ Integrated product elevator allows for contamination-free transfer of materials and product into and out of the dispensing area.
- ⊙ A 50mm lead shielded housing for the dose calibrator is conveniently located below working level.
- ⊙ Radiation detector monitors chamber radioactivity an automated safety interlock prevents the doors from opening if radiation exceeds preset levels (optional).
- ⊙ Fully accommodates ADG-500, ADG-500S, MDV-20, and APDS auto dispensing systems.

# Production Hot Cell

The high-capacity hot cell features an expansive operation platform with dual lead glass viewing windows. Equipped with two shielded glove ports and one tele-tong, the configuration supports simultaneous dual-operator workflows. It is engineered for both high-level research applications and large-scale GMP compliant production.



**Model: PDHC-75** (75/60 mm lead shielding)

- Weight: 8200 kg (18078lbs)

**Model: PDHC-60** (60/50 mm lead shielding)

- Weight: 6800 kg (14991lbs)

- External size: W 152 x D 125 x H 240 cm

- Internal size: W 120 x D 75 x H 70 cm

- Power: 220 V, 15 A



Smart Touch Control Panel

- ⊙ Primary working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation, external surfaces are SUS 304 stainless steel.
- ⊙ The front face is configured with 60mm to 75mm lead shielding; all other sides feature 50mm, 60mm or 75mm shielding options.
- ⊙ The laminar flow dispensing chamber includes HEPA filtration, ensuring air quality complies with Grade A (Class 100/ISO 5).
- ⊙ Innovative vacuum-seal technology ensures the inner containment door remains hermetically sealed.
- ⊙ An integrated touch control panel manages all operating functions, real-time monitoring and dose calibrator readings.
- ⊙ A hinged front door includes a high-density lead glass viewing window.
- ⊙ Two shielded glove ports and one tele-tong enable manipulation in the dispensing chamber.
- ⊙ Integrated product elevator allows for contamination-free transfer of materials and product into and out of the dispensing area.
- ⊙ A 50mm lead shielded housing for the dose calibrator is conveniently located below working level.
- ⊙ A GM detector measures the radioactivity level in the working chamber, an automated safety interlock prevents the doors from opening if radiation exceeds preset levels (optional).
- ⊙ Accommodates auto-dispensing series: MDV-20.

# Dispensing Hot Cell with Tongs and Gloves

This Dispensing Hot Cell with Tongs and pair of gloves are equipped for the operator to handle lower activity radio-pharmacy or isotopes through two shielded glove ports. It is ideal for PET centers or Nuclear Medicine departments to dispense the radio-pharmacy from bulk vials into syringes (unit dose) in a Grade A (Class 100 / ISO 5) environment to comply with GMP.

- ⊙ The working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation. The external surface is SUS 304 stainless steel.
- ⊙ 60mm thick lead shielding on all sides. The hinged front door is equipped with an equivalent shielding for the lead glass viewing window, a tele-tong, and two shielded glove ports.
- ⊙ Air inflatable rubber sealing technology ensures chamber air tightness.
- ⊙ The Laminar Flow Dispensing Chamber includes HEPA filtration that provides air quality to comply with Grade A (class 100 / ISO 5).
- ⊙ The Touch Screen Control Panel with PLC system integrates all operating functions.
- ⊙ A raw material or Ge/Ge-68 generator in/out lead shielded drawer with ventilated air is built on the lower level on the operation side. There is also an interlock function to avoid cross contamination.
- ⊙ A product delivery drawer with lead shielded, air ventilated, and an auto capping device is equipped on the lower level of the operation side. There is also an interlock function to avoid cross contamination.
- ⊙ A dose calibrator with 50mm lead shielded well is equipped below the countertop, controlled at the front of the hot cell (optional).
- ⊙ A radiation detector measures the dose rate inside the chamber and interlocks the door when the radiation level is over preset parameters (optional).



## Model:TGDHC-60 (60/50mm)

- External size: W 120 x D 120 x H 240 cm
- Internal size: W 88 x D 75 x H 70 cm
- Weight: 5500 kg (12125lbs)
- Power: 220 V, 15 A

# Dispensing Hot cell

This hot cell is designed for the safe handling and processing of lower-activity and radiopharmaceuticals or isotopes. Operators can perform dispensing tasks through two shielded glove ports using either automatic or semi-auto dispensing systems. It is the ideal solution for PET centers and nuclear medicine departments, enabling the sterile transfer of radiopharmaceuticals from bulk vials into syringes (unit dosing). All operations are conducted within a validated Grade A (Class 100/ISO 5) environment to ensure GMP compliance.

- ◎ Primary working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation, external surfaces are SUS 304 stainless steel.
- ◎ The front face is configured with 60mm to 75mm lead shielding; all other sides feature 50mm, 60mm or 75mm shielding options.
- ◎ The laminar flow dispensing chamber includes HEPA filtration, ensuring air quality complies with Grade A (Class 100/ISO 5).
- ◎ Innovative vacuum-seal technology ensures the inner containment door remains hermetically sealed.
- ◎ An integrated touch control panel manages all operating functions, real-time monitoring and dose calibrator readings.
- ◎ A hinged front door includes a high-density lead glass viewing window.
- ◎ Integrated product elevator allows for contamination-free transfer of materials and product into and out of the dispensing area.
- ◎ A 50mm lead shielded housing for the dose calibrator is conveniently located below working level.
- ◎ A GM detector measures the radioactivity level in the working chamber, an automated safety interlock prevents the doors from opening if radiation exceeds preset levels (optional).
- ◎ Accommodates auto dispenser ADG-2000 series.



**Model: DHC-75** (75/60 mm lead shielding)  
- Weight: 6400 kg (14109lbs)

**Model: DHC-60** (60/50 mm lead shielding)  
- Weight: 5400 kg (11905lbs)

- External size: W 120 x D 120 x H 240 cm  
- Internal size: W 88 x D 75 x H 70 cm  
- Power: 220 V, 15 A



Smart Touch Control Panel



# Dual Synthesis Hot Cell

This hot cell features two independent, vertically segregated compartments specifically designed to accommodate dual chemical synthesis modules. An integrated shielded side-cabinet provides expanded space for module accessories or serves as a high-capacity security transfer lock for contamination-free delivery of materials and finished products.



**Model: DSC-75** (75/60 mm lead shielding)  
- Weight: 8500 kg (18739lbs)

**Model: DSC-60** (60/50 mm lead shielding)  
- Weight: 7400 kg (16314lbs)

- External size: W 114 x D 129 x H 240 cm  
- Internal size: W 70 x D 70 x H 65 cm  
- Power: 220 V, 15 A

- ⊙ Primary working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation, external surfaces are SUS 304 stainless steel.
- ⊙ The hot cell is shielded with 75mm of lead. All other sides are available with 60mm or 75mm lead shielding options.
- ⊙ An integrated UDAF system in the synthesis chamber utilizes HEPA filtration to maintain Grade B or C compliance (depending on the facility environment). Exhaust air is processed through a charcoal filter to ensure safe radiation containment.
- ⊙ Innovative vacuum-seal technology ensures the inner containment door remains hermetically sealed.
- ⊙ An integrated touch control panel manages all operating functions, real-time monitoring and dose calibrator readings.
- ⊙ A hinged front door allows access to the main working chamber.
- ⊙ A high resolution video monitor displays real-time output from internal CCTV cameras installed in each cell.
- ⊙ A GM detector measures the radioactivity level in the working chamber, an automated safety interlock prevents the doors from opening if radiation exceeds preset levels (optional).
- ⊙ An optional side chamber with 20mm lead shielding is available to expand storage or facilitate material transfer.



The Smart Touch Control Panel

# Synthesizing Hot cell

The expansive interior is specifically engineered to accommodate a chemical synthesis module and its full range of accessories, including HPLC detectors and support equipment. Two integrated shielded compartments are located on the front lower level, providing additional space for components or serving as high-security transfer locks.

- ⊙ Primary working chamber is SUS 316 stainless steel with rounded corners to minimize dust accumulation, external surfaces are SUS 304 stainless steel.
- ⊙ The hot cell is shielded with 75mm of lead. All other sides are available with 60mm or 75mm lead shielding options.
- ⊙ An integrated UDAF system in the synthesis chamber utilizes HEPA filtration to maintain Grade B or C compliance (depending on the facility environment). Exhaust air is processed through a charcoal filter to ensure safe radiation containment.
- ⊙ Innovative vacuum-seal technology ensures the inner containment door remains hermetically sealed.
- ⊙ An integrated touch control panel manages all operating functions, real-time monitoring and dose calibrator readings.
- ⊙ Two overlapping hinged doors provide complete, unobstructed access to the working chamber for easy maintenance and module setup.
- ⊙ A GM detector measures the radioactivity level in the working chamber, an automated safety interlock prevents the doors from opening if radiation exceeds preset levels (optional).
- ⊙ A video monitor displays the output from CCD cameras installed in the cell.



**Model: SHC-75** (75/60 mm lead shielding)  
- Weight: 8300 kg (18298lbs)

**Model: SHC-60** (60/50 mm lead shielding)  
- Weight: 7000 kg (15432lbs)

- External size: W 120 x D 130 x H 240 cm  
- Internal size: W 88 x D 70 x H 70 cm  
- Power: 220 V, 15 A



Smart Touch Control Panel

# Shielded Glove Box

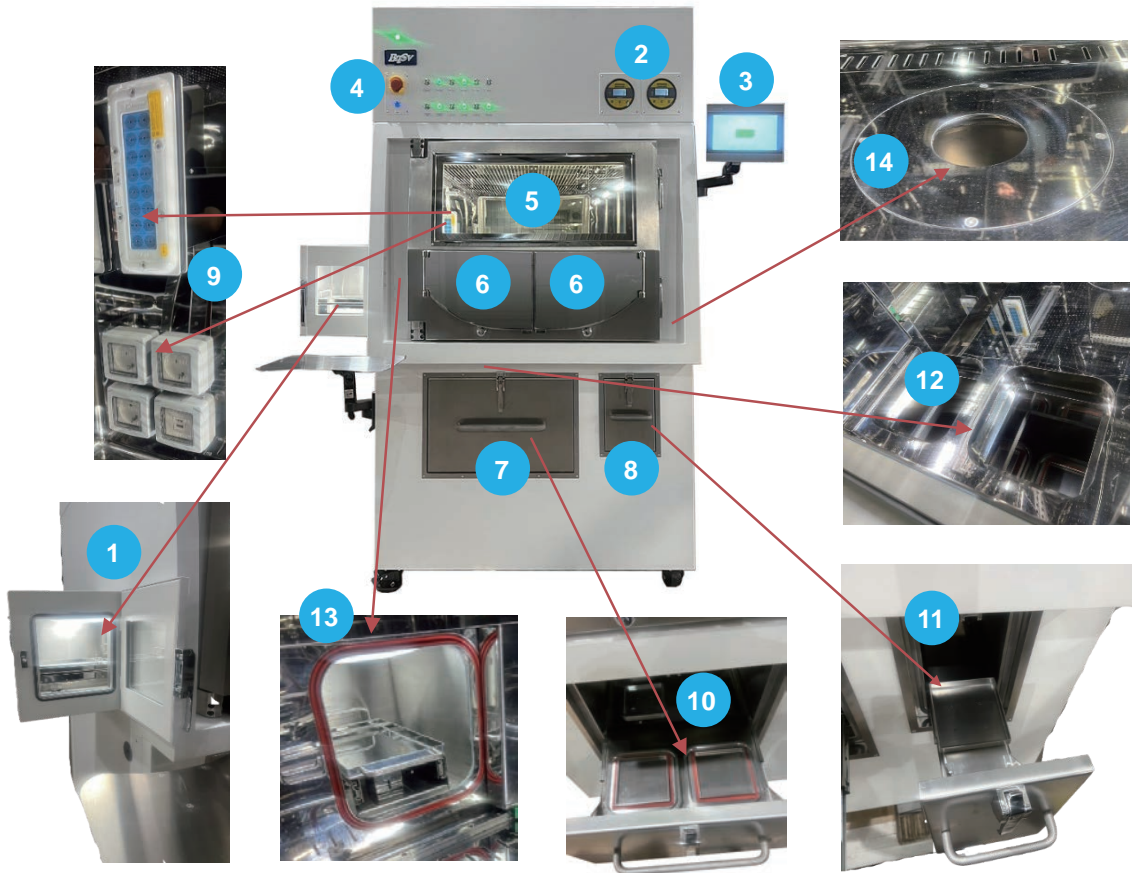
Our Shielded Glove Box is engineered to accommodate both automated dispensing and synthesis modules for  $^{99m}\text{Tc}$  and  $^{68}\text{Ge}/^{68}\text{Ga}$  applications. Optimized for preparation, compounding, and dispensing, the system is fully compliant with USP <823> and USP <825> standards for radiopharmaceutical handling.



The Shielded Glove Box is optimized for the preparation, compounding, and dispensing of low-to-medium energy radiopharmaceuticals, including  $^{68}\text{Ge}/^{68}\text{Ga}$  and  $^{99m}\text{Tc}$ . It offers modular shielding configurations ranging from 5 mm to 55 mm Lead (Pb) equivalence. The ventilated and shielded generator compartment, integrated into the lower-front section, accommodates up to two  $^{99m}\text{Tc}$  or  $^{68}\text{Ge}/^{68}\text{Ga}$  generators. The spacious internal chamber is designed to house both an automated dispensing system and a synthesis module on a single platform. For optimal ergonomics, the shielded dose calibrator compartment and waste decay housing are located beneath the work surface. A ventilated lateral airlock chamber, equipped with an automated shielded sliding door, facilitates the transfer of materials while maintaining a hermetic seal to prevent cross-contamination.

The HEPA-filtered laminar airflow system ensures a Grade A (ISO 5) environment within the main chamber. The front fascia features an ergonomic dual-port glove system and an inclined lead glass viewing window, providing the operator with an unobstructed view of the workspace. A smart control interface integrates real-time sensors for temperature, humidity, internal pressure, and airflow rates, providing comprehensive data logging and monitoring during operation. A smart control panel integrates thermal, humidity, air pressure, and air flow rate sensors in one single system, monitoring and recording all data during operation. As an optional function.

# Shielded Glove Box



- 1. Ventilated Lateral Airlock | 2. Differential Pressure Gauge | 3. Smart Control Panel | 4. Power Toggle
- 5. Inclined Lead Glass Window | 6. Ergonomic Glove Ports | 7. Shielded Generator Vault | 8. Shielded Waste Bin
- 9. Power Socket & Roxtec Cable Transit (MCT) | 10. Shielded Generator Compartment with motorized lift
- 11. Shielded Waste Bin | 12. Shielded Airtight Door to Generator Compartment | 13. Lateral Shielded Airlock Door
- 14. Dose Calibrator



Front door opened position with inclined viewing window

## Specification

**Exterior dimensions:** W1300\*D1100\*H2300mm (304 stainless steel & carbon steel with epoxy painted)

**Internal dimensions(Working area):** W1100\*D850\*H800mm(316 mirror stainless steel)

**Lateral pass box:**W380\*D380\*H380mm

**Generator compartment:** W600\*D400\*H400 mm

**Waste bin:**W150\*D300\*H300mm

**Accessory:** Dose calibrator 、 Led light 、 UV Light 、 Air pressure gauge 、 two power sockets, Roxtec cable transit

## Radiation Protection

All operation sides :5 to 50 mm lead

Generator compartment :20 to 50 mm lead on Front, 10 to 40 mm lead on other sides.

Dose calibrator compartment :40 mm lead

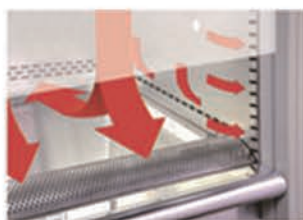
Waste bin :20 mm

Shielded view window: 5 to 50 mm lead equivalent.

Physical thickness 20 to 180 mm

# Radioactive Bio-Safety Cabinet

The RBSC is a Class II Type A2 Biosafety cabinet integrated with lead shielding, specifically designed for handling radioactive and biohazardous materials. It provides comprehensive protective for the operator, the environment, and the product.



Air flow trend



Sliding Lead Glass



- ⊙ The internal workzone is fabricated from a single piece of stainless steel with rounded corners to minimize particulate adhesion. The exterior is constructed from durable carbon steel with a high-resistance epoxy finish.
- ⊙ Inlet air is processed through HEPA filtration (99.99% @ 0.3 $\mu$ m) with 70% air recirculation and 30% exhaust to ensure a sterile environment.
- ⊙ Featuring an innovative surrounding and intake grille, all contaminated air is contained within the cabinet, while external air is directed into dedicated air trenches to prevent internal contamination.
- ⊙ A vertical tempered glass sash is designed for optimal positioning to prevent cross-contamination.
- ⊙ Lead shielding is available for all sides, with thicknesses ranging from 5mm to 20mm based on customer requirements.
- ⊙ A sliding lead-glass block is integrated at the front to protect the operator from radiation exposure during procedures.
- ⊙ A shielded dose calibrator housing is built-in beneath the work surface for seamless activity measurement.

**Model: RBSC-05**

(5 mm lead and leaded glass shielding)

Weight: 400 kg (881lbs)

**Model: RBSC-10**

(10 mm lead and leaded glass shielding),

Weight: 600 kg (1322lbs)

**Model: RBSC-20**

(20 mm lead and leaded glass shielding)

Weight: 1000 kg (2204lbs)

Size:

External size: W 120 x D 93 x H 225 cm

Internal size: W 100 x D 56 x H 63 cm

# Radio-Chemical Fume Hood

Radio-chemical fume hood (RFH) is an enclosure that safely contains and ventilates radioactive hazardous, vapors, gases, and dust generated by radio-chemical processes performed in the fume hood is thus not inhaled by operators of these hazardous substances. The slide down window with a position alarm on its front protects workers from spills and splashes that may occur during operation.

- ⦿ The internal work cabinet is fabricated from SUS 316 stainless-steel with rounded corners to reduce particulate adhesion. The external body is made with SUS 304 stainless-steel.
- ⦿ The inlet air is filtered through a HEPA filter and the exhausted air is filtered through an active charcoal filter.
- ⦿ The innovative surrounded air intake grille design. All contaminated air in the work area is enclosed inside the cabinet.
- ⦿ The lead shielding on all sides and moveable lead glass block on the front are built with 5mm, 10mm and 20mm of lead equivalence for different radiation safety approaches.
- ⦿ A dose calibrator with 20 or 40mm of lead shielding is equipped beneath the platform.
- ⦿ The Smart Touch Control Panel with the PLC system integrates all operating functions.



## Model:RFH-05

(5 mm lead and leaded glass shielding)

## Model:RFH-10

(10 mm lead and leaded glass shielding)

## Model:RFH-20

(20 mm lead and leaded glass shielding)

- External : W120x D85x H 235 cm
- Internal : W100x 62x H75 cm
- Lead glass: W30x H50 cm
- Power: 220 V, 15 A



Smart Touch Control Panel

# Auto Dispensing System

These advanced automatic dispensing systems are stand-alone, modular devices comprised of three core components: the pump and valve control unit, mechanical control units, and integrated operating software.

Decay Correction

Saline dilution

GMP Compliance

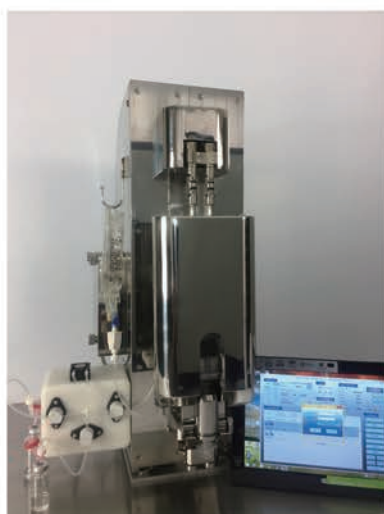
Stand-alone

Gas extraction

Dose measurement



CE



Model: ADG-2000 ( for Syringe )

- Direct dispensing into shield syringes significantly reduces extremity (hand) exposure.
- Features automatic activity measurement with real-time decay correction for high-dosing accuracy.



Model: ADG-500S ( for Vial & Syringe )

- Engineered for dispensing into either sealed aseptic vials or capped syringes, offering maximum flexibility for different clinical needs
- Ensures full activity measurement and decay correction for every dispensed dose.



Model: ADG-1000 ( for Syringe )

- Specialized dispensing into capping syringe to eliminate the risk of liquid leakage and contamination.
- The system automatically rotates the syringe into the dose calibrator for precise activity verification before final use.

# Auto Dispensing System

## Efficiency

Dose measurement, decay correction, saline dilution, and gas extraction are integrated into a single seamless continuous step.

## Accuracy

High precision dosing with a volume accuracy within 5% (less than 0.02ml)

## Capacity

High activity management capable of handling up to 4000mCi at concentrations of 130Ci/ml.

## Speed

Rapid processing—dispensing, dilution, and gas extraction are completed in less than 30 seconds.



The integrity software suite is divided into two primary modules to optimize workflow and compliance.

### 1. Radiopharmacy Module:

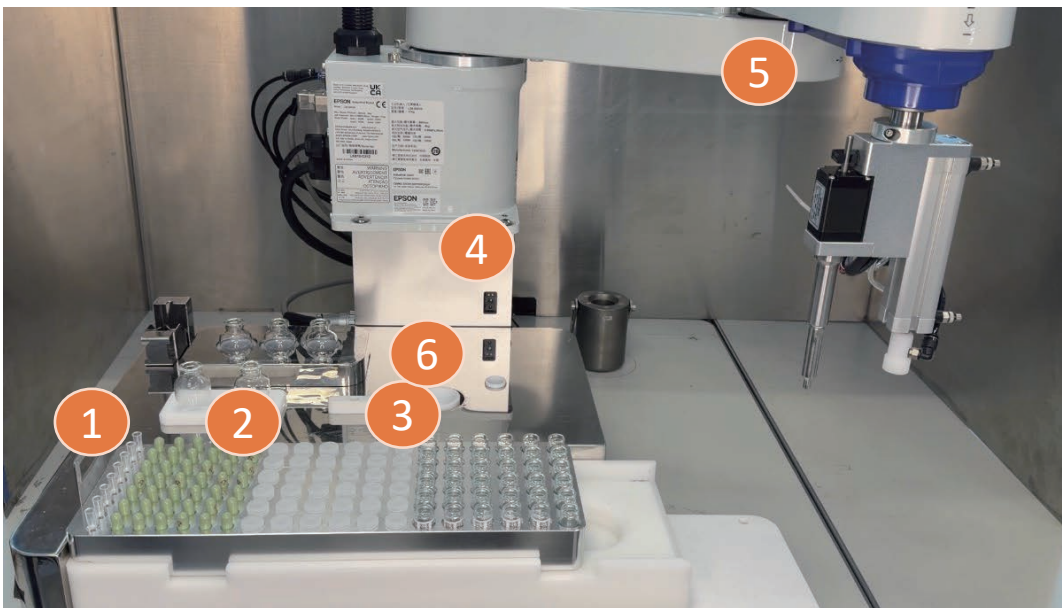
- ⊙ Supports the selection of up to 12 different nuclides for dispensing.
- ⊙ Enables simultaneous activity measurement for both the mother vial and the daughter syringe.
- ⊙ Automated decay time correction and activity calculations for both source and dispensed doses.
- ⊙ Automated volume calibration and activity concentration measurements for daily QC protocols

### 2. Patient Management Module:

- ⊙ Records critical metrics including ID, weight, DOB, reduced dose, and actual dispensed dose.
- ⊙ Automatically calculates and records residual activity in the empty syringe post-injection.
- ⊙ Features a remote display interface for real-time monitoring within the PET injection room.
- ⊙ Maintain a complete patient history database with electronically recorded and signed reports for audit readiness.

# Robotic I-131 Capsule Dispenser

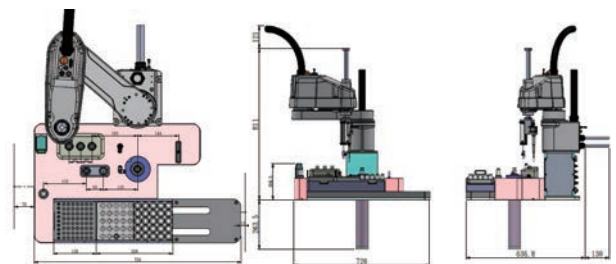
The main purpose of this Robotic I-131 Capsule Dispenser (CRD2-I131) is to dispense the I131 liquid into capsules. The system will first move the capsules from the capsule tray, then separate the capsules up and down, and then dispense the I131 liquid as required. After that, the capsules are pressed and closed, and then measure the activity whether meets the requirements, and then the capsule is thrown into the carrying vial. Finally, the carrying vial is pressed and closed before being sent. The following is an introduction to the software functions and features.



1. Tips
2. Capsule
3. Carrying Vial
4. Barcode Scanner
5. Capsule Dispensing Robot
6. Dose Calibrator

## Specifications:

- ⊙ Dispensing accuracy amount: 1.0 ul
- ⊙ Minimum dispensing volume: 10.0 ul
- ⊙ Vial volume: 10ml
- ⊙ Dispensing error +/- 2ul.
- ⊙ Pipette Tip : at 10, 20, 50, 200ul
- ⊙ Provides actual measurement, is not affected by shielding or residuals from any tubes or pipe.
- ⊙ Dispense information can be pre-entered on the software, per a single batch to dispense, it allows up to 300 data entries.
- ⊙ available to dispense in both Volume/Activity mode
- ⊙ available to set up three mother vials into different concentration to meet the dispensing requirements
- ⊙ Dispense information can be stored and be inquired later, for data management and analysis.



Model: CRD2-I131

## Dimensions:

- W 726 x H 811 x D 636.8mm. (excluding wiring or connectors of Robot)
- Weight: ~25kg

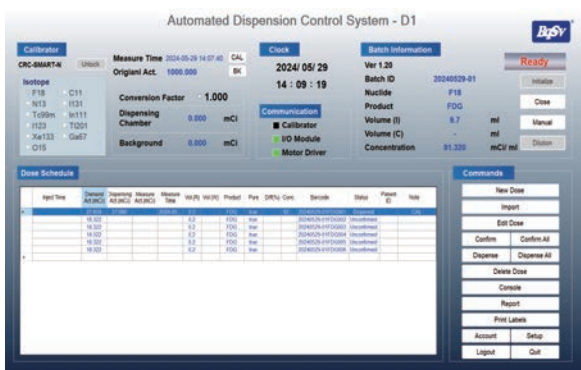
# Multi-Functional Automatic Dispensing Unit

This dispensing unit combines activity dispensing and bubble test point functions into one. It is a fully automatic procedure for vial de-capping, dispensing, dilution, dose measuring, and capping without any intervention. Additional functions for syringe and closed vial dispensing are available. A dose calibrator and bar code scanner are integrated to measure activity and match final product labels. The simple operation interface makes daily usage seamless, and complies with 10 CFR 21 requirement on security, quality, and safety.



## Model: D-1

- Dimension: 40 x 26.25 x 60.35 cm
- Weight: approx. 23kg (50.7lbs)



Software Interface

## Features

- Fast: fewer than 60 seconds to complete one vial from de-capping to dispensing, dose measurement, and capping procedure.
- Accurate: 0.2ml <8%, 0.5ml <5%, 2ml – 10ml <3%.
- Measurement: Automatic activity compensated function
- Dilution: Automatic volume setting for solution(s)
- Last Dose Warning: prediction for the last dose (volume and activity)
- Data Input: PC Windows Excel or Word input production file
- Data Output: Batch file and recorded logs
- Dimensions: W60 x H40 x D27cm
- Weight: 23kg (50.7lbs)
- Power: 110/220v single phase, 5 amps
- Pressured gas: 6 bar

## Accessories:

1. Sterilization tubes, kits and 0.22 um filter.
2. Mother shielding container.
3. Waste shielding container
4. PC and operation software with Patient management system.
5. Dose calibrator ( Capintec smartchamber )
6. Label printer

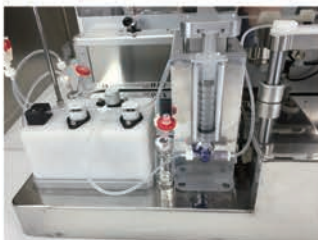
# Automatic Multiple Vials Dispenser

The Automatic Multiple Vial Dispenser is engineered for high-volume cyclotron facilities, facilitating mass production and distribution in full compliance with GMP requirements. The system enables the continuous, uninterrupted production of up to 30 vials per cycle. A fully automated workflow for vial retrieval and removal of aluminum caps and rubber stoppers (unsealing), precision radiopharmaceutical filling and rubber stopper re-insertion. Automated dose measurement and final aluminum cap crimping. Finally, bar code labeling and automated delivery of finished vials to transport containers.



## Software Control and Process Management

- Includes over 12 isotopes in the database; automatically performs decay correction, activity calculations and volume dilutions.
- Fully automated PC-controlled for maximum efficiency, with a semi-automatic override option for operator preference.
- Simplifies daily production and QC testing with automated volume/activity calibration routines.
- Robust data management tracks batch numbers detailed product information, and patient-specific data or full traceability.



Injection Station



Rotating Carriage

### Model: MDV-12

- Dispensing time: Average 70 second per vial (15 minutes for 12 vials)
- Dimensions: W 74 x D 51 cm x H 35 cm
- Weight: 40 kg (88lbs)
- Power: 110 voltage, 1 phase, 10 Amp
- Pneumatic pressure: 6 bar

# Automatic Drawing Stand

The Automatic Drawing Stand is a specialized radiopharmaceutical dispenser designed for PET centers, nuclear medicine labs, and research facilities. The system daily operations through a reliable, kit-free workflow. Its innovative engineering allows users to complete demanding dispensing tasks in one seamless step.

## Automation

- ⦿ The precision stepper motors manage positioning. One actuator inserts the needle into the vial, while the second pulls the syringe plunger to the programmed volume with high accuracy.

## Convenience

- ⦿ The intuitive PC interface simplifies operation, providing functional management of the entire dispensing process.

## Speed

- ⦿ A single-step dose preparation is completed in under 20 seconds.

## Shielding

- ⦿ The 9mm tungsten syringe shield features integrated LED shielding, ensuring robust radiation protection and a clear view of the volume during draw.
- ⦿ It accommodates tungsten (PET) or lead glass (SPECT) vial shields from 10ml to 30ml.

## Smart software function

- ⦿ Advanced software manages dispensing via PDM or Quick modes, supporting both volume-based and activity-based draws.
- ⦿ With a library of 12+ isotopes, it automatically performs decay corrections for the bulk vial and the unit dose.
- ⦿ Patient and dose data are logged for easy management.

Ideal for SPECT drugs



- (1) Syringe introduction
- (2) Plunger drawing

### Model: ADS-100

- Dimension: W 15 x D 22 x H 40cm
- Weight: approx. 7.8 kg (17lbs)
- Power: 110 to 220 volts, 1 phase, 5 amp
- Vial size: 10 ml and 30 ml
- Syringe size: 3ml and 5ml BD

# Bubble Point Tester

The Automatic Bubble Point Tester is a high-precision digital device used for filter membrane integrity testing, ensuring the sterility of the final radiopharmaceutical product. The system features a streamlined two-part design: a control unit with dual solenoid valves and a digital LED pressure gauge, and an automated adjustable air regulation unit.

## Universal Adaptability

- ⊙ Fully compatible with most hydrophilic membrane filters.

## Fully Automated Operation

- ⊙ Designed for hands-free execution of the testing cycle to significantly reduce staff radiation exposure.

## Unmatched Flexibility

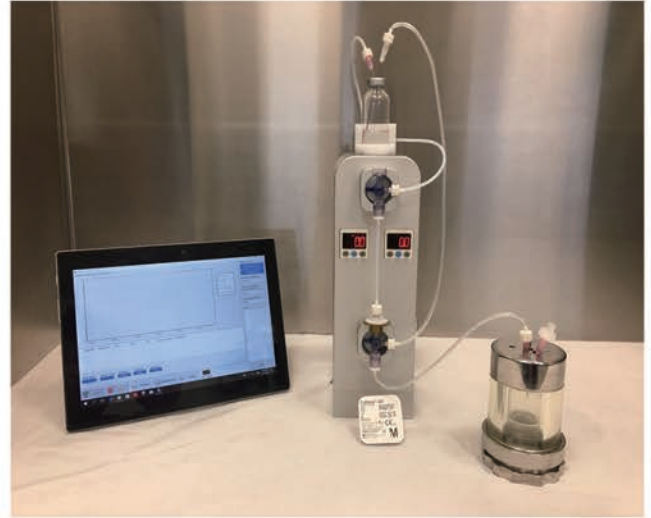
- ⊙ Fully adjustable test parameters, allowing users to customize pressure ranges and sampling times for various filter types.

## Compacted & Integrated

- ⊙ Space-saving footprint designed for easy installation.

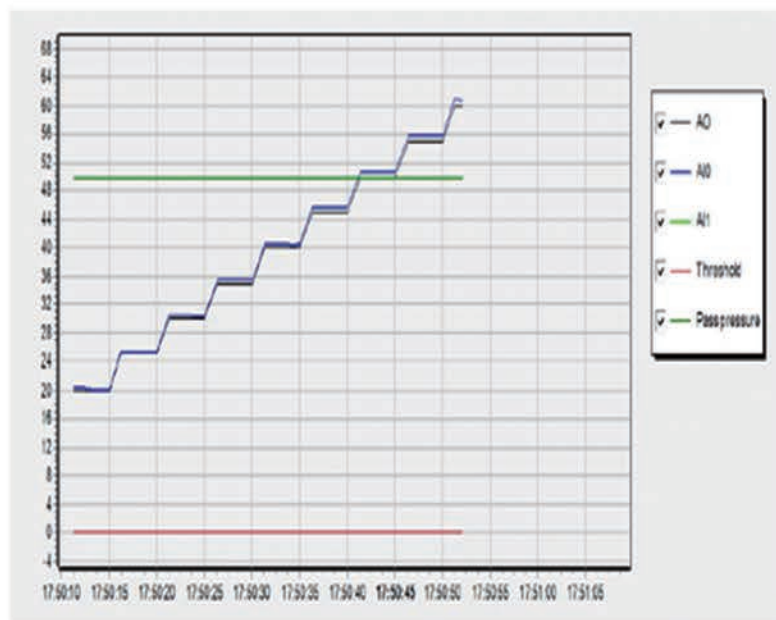
## Data Management

- ⊙ Automatically generates validated testing reports for audit compliance
- ⊙ Full traceability with the ability to export or print data logs
- ⊙ User friendly interface designed for intuitive operation



## Model: BPT

- Dimension: W 10 x D 14 x H 30 cm
- Weight: 2.5 kg (5.5lbs)
- Power: 110 to 220 volts, 5 amps, 50/60 Hz
- Gas Power: 6 Bars



# Automated Dilution System

The DUL-01 is a state-of-the-art automated dilution system designed to deliver precise and reproducible dilution results in pharmaceutical manufacturing. It features adjustable insertion depth and volume settings, a tilted base for complete liquid extraction, and an integrated air displacement pipetting system. The 180° inversion mixing action effectively eliminates residual liquid, while the automated workflow minimizes human error.



## Model: DUL-01

- Width: 26.4 cm
- Height: 53.8 cm
- Depth: 37.8 cm
- Weight: Approximately 13 kg (28lbs)
- Volume measurement accuracy:  $\pm 10\%$  for volumes between 0.2 ml and 1 ml, and  $\pm 5\%$  for volumes between 1 ml and 100 ml.
- Install requirement: AC 110V/220V, 5A/ 2.5A, single phase, Dry air, 6 Bar (85 Psi).

## Key Features:

- ⦿ Highly Customizable: Precise adjustment of insertion depth, dilution volume, and cycles.
- ⦿ Fully Automated: Automated process from sampling, dilution, to mixing.
- ⦿ High Precision: Achieves the highest level of precision in every dilution.
- ⦿ Flexible Design: Interchangeable bases and optional volume measurement.
- ⦿ Efficient: High flow rate and tilted base for improved efficiency.

# RadPharm Auto Injector (R1)

For daily PET and SPECT drugs injection



Do you still work like these?



*R1 is the best solution to accomplish your daily complicated working procedure from dose preparation to patient injection with accuracy, safety and efficiency.*

Our Goal is **3A** to achieve **3R** and **3I**

What is **3A** ?

**A**ccurate

Dose on demand and by patient weight

**A**utomatic

Dose and patient information automatic management

**A**ffordable

Machine and consumable kits are affordable

What is **3R** ?

**R**educe radiation exposure

**R**educe the residual dose

**R**educe daily working load





R1 is our best solution to improve our daily FDG injection in accuracy and efficiency.  
My colleagues can't without it for daily busy works

## What is **3I** ?

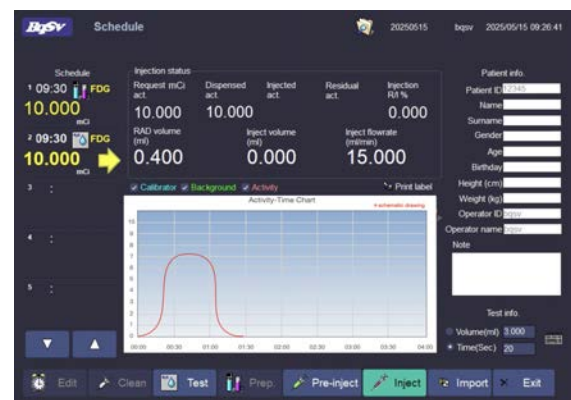
**I** **Improve patient dose accuracy**  
Injection dose by patient's weight  
Injection dose with decay time correction

**I** **Improve image quality control**  
Dose accuracy improves image quality  
Injection dose alliance with scanning machine performance (optional)

**I** **Improve your daily working efficiency**  
Patient early come and early go.  
Patient information management in file automatic



Injection model



Dose administration rate

### Automation

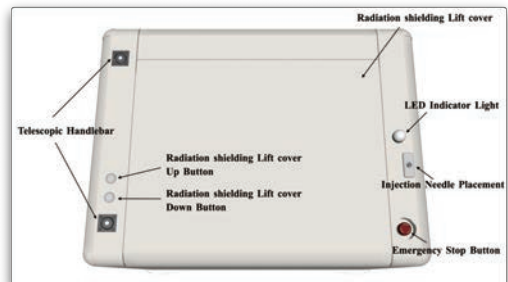
- ⊙ Various isotopes activity on demand with automatic decay correction
- ⊙ Automatic load in presetting patient and dose information
- ⊙ Programmable infusion speed and volume, also able to switch the drug and saline water automatically
- ⊙ Automatic perform pre-injection , injection, and saline water infusion in one step

### Safety

- ⊙ Flow pressure sensor with alarm lighting to avoid obstacle during injection
- ⊙ Bubble sensor with control valve to stop the small gas inject into patient
- ⊙ Patient identifier to avoid wrong dose to patient

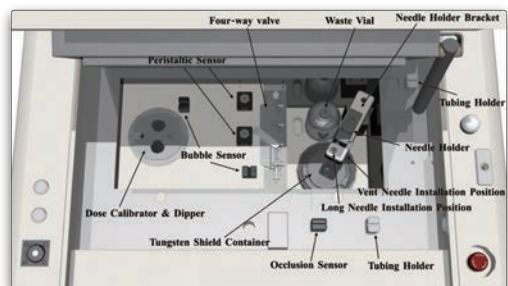
### Protection

- ⊙ The tungsten shielding PIG and Housing to provide dramatic radiation protection
- ⊙ Remote controller allows operation in distance to reduce radiation exposure during injection



### Specification

Multiple isotopes	F-18, Ga-68, Cu-64, Tc-99, TI-201, Lu-177, Ac-225
Max. activity	>800 mCi
Injection time	30 to 120 seconds
Power	120 V / 60 Hz / 3A
Size	L850 x W642 x H795 mm
Weight	550 kgs (1212lbs)



# RadPharm Auto Injector (R3)

A versatile administration system designed for PET, SPECT and Lu-177 therapeutics.



Ministry of Health and Welfare (MOHW)  
Medical Registration No:  
MOHW-MD-Mfg No.007485

### Automation

- ⊙ Automatically adjusts for isotope decay to ensure precise activity on demand.
- ⊙ Seamless syncing for patient profiles and prescribed dose information
- ⊙ Precise management of speed and volume with automated switching between radiopharmaceuticals and saline
- ⊙ Executes pre-injection, primary injection, and saline flush in a single, automated sequence.

### Safety

- ⊙ Flow pressure sensor with alarm lighting for obstacle notification
- ⊙ Bubble sensor with control valve to stop gas
- ⊙ Patient identifier to prevent incorrect dosing

### Protection

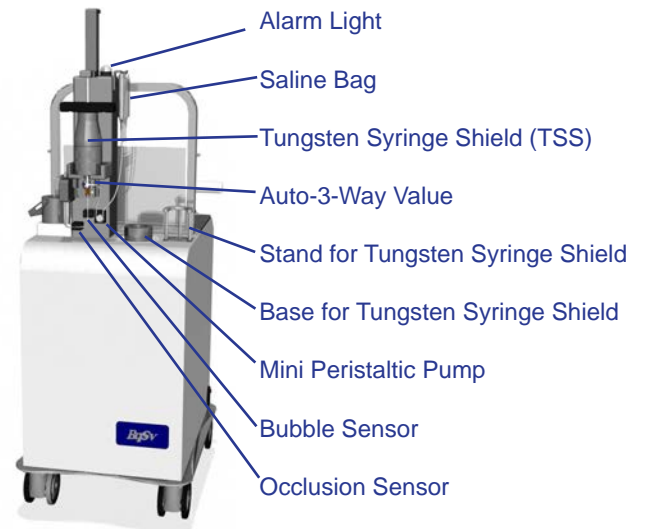
- ⊙ Tungsten shielding PIG and housing provide maximum radiation attenuation for staff and patients.
- ⊙ Wireless/remote control allows for distanced operation, reducing occupational exposure.

### Accuracy

- ⊙ High-reliability micro-pump and software suite to precise milliliter (mL) volume control.
- ⊙ Consistent delivery: <8% variance for volumes exceeding 0.25mL, <8% variance for volumes exceeding 0.75mL

### Less price

- ⊙ Compact, intelligent design reduces initial capital investment (Capex).
- ⊙ Highly affordable disposable kits minimise ongoing procedural expenses.



### Model : R3

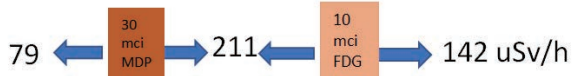
Multiple isotopes	F-18, Ga-68, Cu-64, Tc-99, TI-201, I-131, Lu-177, Ac-225
Max. activity / concentration	200 mCi/5 ml for F-18, I-131 and Lu-177 200 mCi/5 ml for Tc-99 & TI-201
Flow rate	0.45 ml/min to 9 ml/min
Injection time	30 seconds to 60 minutes
UPS	30 minutes
Power	120 V / 60 Hz / 3A
Size	L60 x W46 x H110 cm
Weight	less 100 kgs (220lbs)



# Reducing radiation exposure from patients

## Styling and Shielding Chair

NM Patient's radiation exposure to companion



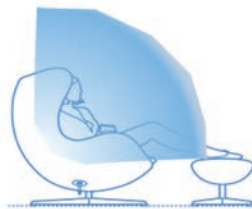
Lead shielded



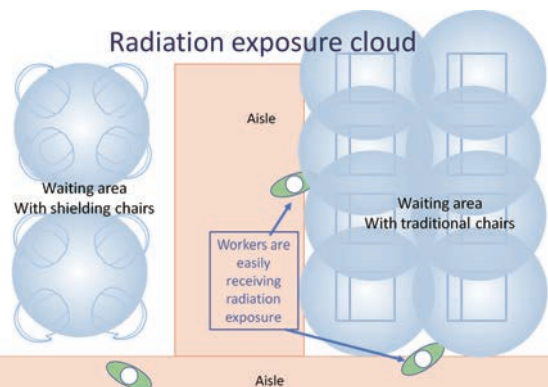
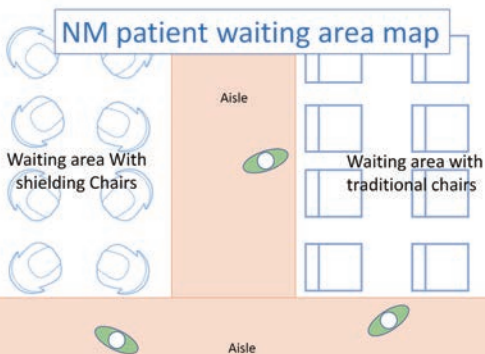
Styling Design



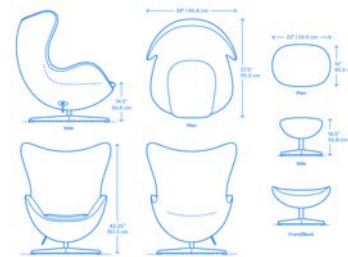
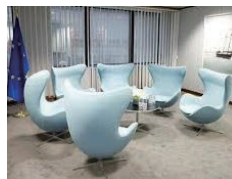
Un-shielded chair



Shielded Chair



The radiation cloud size of traditional chair area is about 4 times than shielded chair area



Space arrangement and location

- ⊙ 2 mm lead shielding
- ⊙ Weight:35 kgs (77lbs)

# PET UNIT DOSE CABINET

Designed for PET hot labs with space limitations, the PET Unit Dose Cabinet is a fully shielded storage cabinet which provides a space-efficient work area.

The cabinet supports the 02-G001-3 L-Block Shield Compact with built-in Dose Calibrator Shield. To maximize work space, the dose calibrator display unit is installed on a stand above the countertop. The lower cabinet, with key-locking doors, is equipped with two sliding shelves. The upper shelf is capable of easily storing syringes, syringe shields and other small items. The bottom shelf accommodates PET shipping containers. All sides of the cabinet are completely lead shielded (25", 5" and 1"), and can stand alone or be in combination with other cabinets.

The cabinet is 36.5" in height, in accordance with the industry standard. It includes a stainless steel countertop incorporating a 0.5" lip and 4" backsplash. A unified countertop work surface can be provided when ordering multiple units for combined configurations.

Upon request, the L-Block and Sharps Shield will be installed in place before shipping, so there will be no need for on-site lifting equipment. Only a simple pallet jack is required to move the unit.

- ⊙ Desing for PET hot labs with space limitations.
- ⊙ Accommodates:
  - Compact L-Block Shield with Built-in Dose Calibrator Shield
  - PET Sharps Container Shield
  - Lead Brick Cave
  - Capintec Dose Calibrators and most others
- ⊙ Sliding shelves for PET shipping containers and small items
- ⊙ All six sides shielded with lead
- ⊙ Key-locked doors



## RELATED:

- 02-G01-A Sharps Container Shield, ST SUS 304 with 1" (25mm) lead lined
- 02-G01-B L-Block Shield Compact, ST SUS 304 With built-in 40 mm Dose Calibrator lead Shield
- 02-G01-C Lead Brick Cave, epoxy coat 3-wall, 2" lead Fits 02-G01-B L-Block Shield
- 02-G01-D Sharpe container, 50/PKG

## 02-G01-07 PET Unit Dose Cabinet

- Dimensions: 36.5" w\*61" depth\*36.5" h (93\*61\*93cm)
- Lead Shielding: 0.28" thick (0.7cm)
- Finish: All for Stainless steel SUS 304,
- Doors: Key-locked
- Countertop: Stainless steel with 4" (10.2cm) backsplash and 0.5" (1.3cm) spill proof lip
- Weight Capacity: 900kg (1984lbs)
- Weight: 860kg (1896lbs)



## PET Dispensing Station

The PET Dispensing Station consists of two primary components, one in a tungsten vial shield that doubles as a secure shipping container, and the open is a stainless-steel rotary station that allows for 360-degree horizontal and vertical rotation.



### 02-A010

- \* Up to 30 ml vial can be accommodated
- \* 35 mm thick tungsten shields
- \* 360-degree horizontal/vertical rotation
- \* Dimensions : H 30 cm × Ø 20 cm base.
- \* Weight : 20 kg (44lbs)

## PET Syringe Shields

This innovative PET syringe shield . The 9mm tungsten shielding reduces radiation exposure from PET drugs by approximately 90%.



Without lead glass (9 mm tungsten shield)

02-A016-1 for 1 ml BD Syringe

02-A016-3 for 3 ml BD Syringe

02-A016-5 for 5 ml BD Syringe

02-A016-10 for 10 ml BD Syringe

## Dose Drawing Station

The Dose Drawing Station is a unique system designed to hold various vial shields during compounding and dose extraction process. Its adjustable fingers accommodate different shield sizes with a maximum capacity of 10kg (22lbs). Once the fingers are locked, the arm allows for agitation during compounding and can be rotated into multiple positions for precise drawing. The weighted base rotates 360 to ensure an ergonomic working position for the operator.



### 02-A201

- The finger gripping range: Diameter 2.3 cm to 7.9 cm
- The loading weight : up to 9kg (20lbs)
- The operating height : From 20 to 28 cm
- The foundation diameter : 18 cm  
(360 degree rotation)



Gripping



Shaking



Rotation



Height

## Tungsten PET Vial Shields

The Tungsten PET Vial Shield is engineered for high-activity isotopes like I-131 and those used in PET imaging. Its 21mm tungsten shielding provides a 99% reduction in radiation exposure from 0.511MeV radioisotopes. The magnetic cap design enables rapid removal, significantly lowering the extremity dose to the hand during routine pharmacy operations.



### 02-A035-1 (10 ml vial)

\* Diameter : outer 65 mm, inner 23 mm.

\* Height :108 mm

\* Weight : 5.9 Kgs (13lbs)

### 02-A036-1 (30 ml vial)

\* Diameter : outer 79 mm , inner 37 mm.

\* Height : 128 mm

\* Weight : 9.5 Kgs (21lbs)

### 02-A037-1 (50 ml vial)

\* Diameter : outer 86 mm, inner 44 mm.

\* Height :124 mm

\* Weight : 12 Kgs (27lbs)

## PET Dose Pig

The PET Dose PIG is constructed entirely of tungsten to provide continuous shielding from delivery through injection. It features a modular design including a separate syringe shield, main body, and head and tail sections. With a tungsten shielding up to 28mm thick, it reduces radiation exposure from PET isotopes by 99%.



- 02-A005 (including a 02-A030-1 Syringe shield)
- Material : Tungsten, 28 mm thickness
- Size : Ø 70 mm, length : 223 mm (without handle)
- Weight : 11.5 Kg (25 lbs)
- Use for 3 ml and 5 ml syringe

## Unit dose Pig Shipping Systems



The Unit Dose PIG utilizes 8mm lead shielding for the transport of lower-activity radiopharmaceuticals in syringes. The external body is made of durable polycarbonate to protect the syringe from damage or liquid leakage during transit.

Three colors are available.

- 02-D112-W Unit Dose Pig (White)
  - 02-D112-B Unit Dose Pig (Blue)
  - 02-D112-G Unit Dose Pig (Green)
  - 02-A027-P Unit Dose Shipping Bag
- Material : 8 mm lead shielding
  - Size : H 23 cm, Ø : 4.35 cm
  - Weight : 1.46 kg (3.22lbs)
  - Size : W34 x D16 x H28 cm

## Type A packaging containers

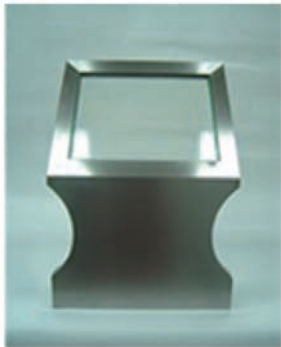
The shipping systems for the safe transport of radionuclides. The Shield Shipping Systems are built for strength, efficiency, and ergonomic use, ensuring secure transport, easy handling.

- 02-A065-10 - Size: H 13.9 cm, Ø: 6.5 cm - Weight: 2.05 kg (4.5 lb)
- 02-A065T-10 - Size: H 13.9 cm, Ø: 6.5 cm - Weight: 3.85 kg (8.5 lb)
- 02-A065-20 - Size: H 15.2 cm, Ø: 8.5 cm - Weight: 5.41 kg (11.9 lb)
- 02-A065T-20 - Size: H 15.2 cm, Ø: 8.5 cm - Weight: 8.55 kg (18.8 lb)
- 02-A065-30 - Size: H 16.7 cm, Ø: 10.5 cm - Weight: 9.77 kg (21.5 lb)
- 02-A065T-30 - Size: H 16.7 cm, Ø: 10.5 cm - Weight: 16.37 kg (36.1 lb)
- 02-A065-P Shipping Box - Size: W29 x D22 x H25 cm



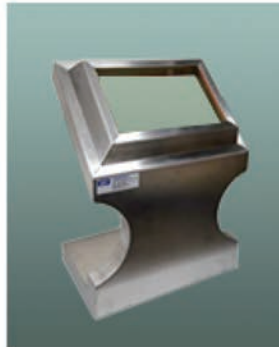
# L-Block Shield

The innovative, human-centric design provides superior visibility and shielding. Multiple L-shaped lead screens can be combined to form a continuous workbench, allowing several operators to work simultaneously and process various radionuclides without interference. Units can be combined to create a shared, high-safety processing area. Designed for use with long-handled pliers and lead-line gloves for dedicated workbench operations.



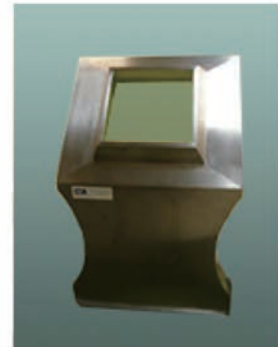
L-Block-05

Size :  
L 40 x D 25 x H 53 cm  
Weight : 30 kg (66lbs)  
Lead Glass :  
L 25 x D 2 x W 20 cm



L-Block-10

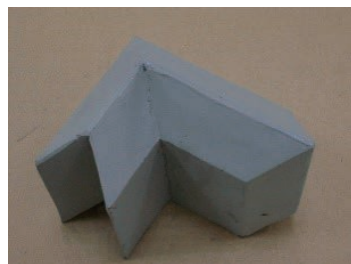
Size :  
L 40 x D 25 x H 53 cm  
Weight : 50 kg (110lbs)  
Lead Glass :  
L 25 x D 5 x W 20 cm



L-Block-25

Size :  
L 40 x D 25 x H 53 cm  
Weight : 70 kg (154lbs)  
Lead Glass :  
L 22.5 x D 12 x W 14.5 cm

# Lead Brick



02-D022-1

L-Shaped Lead Brick  
Size : L 10 x D 5 x H 8 cm  
Weight : 4.6 kg (10lbs)



02-D020-1

Rectangular Lead Brick  
Size : L 10 x D 5 x H 8 cm  
Weight : 4.6 kg (10lbs)

# Lead Glasses

According to the International Commission on Radiological Protection (ICRP) and the International Radiation Protection Association (IRPA), industrial or medical X-rays, r-rays, neutron beams, or proton beams can cause radiation-induced cataracts, retinopathy, optic neuropathy, keratitis, or iridocyclitis. Therefore, appropriate lead protective eyewear should be worn during work.



Material: Lead glass lenses (front) with wraparound side protection

Lead Equivalence: Front: 0.75 mm Pb  
Side: 0.5 mm Pb

Weight: 85±10 g

Accessories: Soft cleaning cloth, hard-shell glasses case



# Lead Apron

We provide high quality of non-lead and lead apron from 0.3 mm to 1.0 mm lead shielding protection  
Contact us for more choices



Rear-Entry



Two-Piece

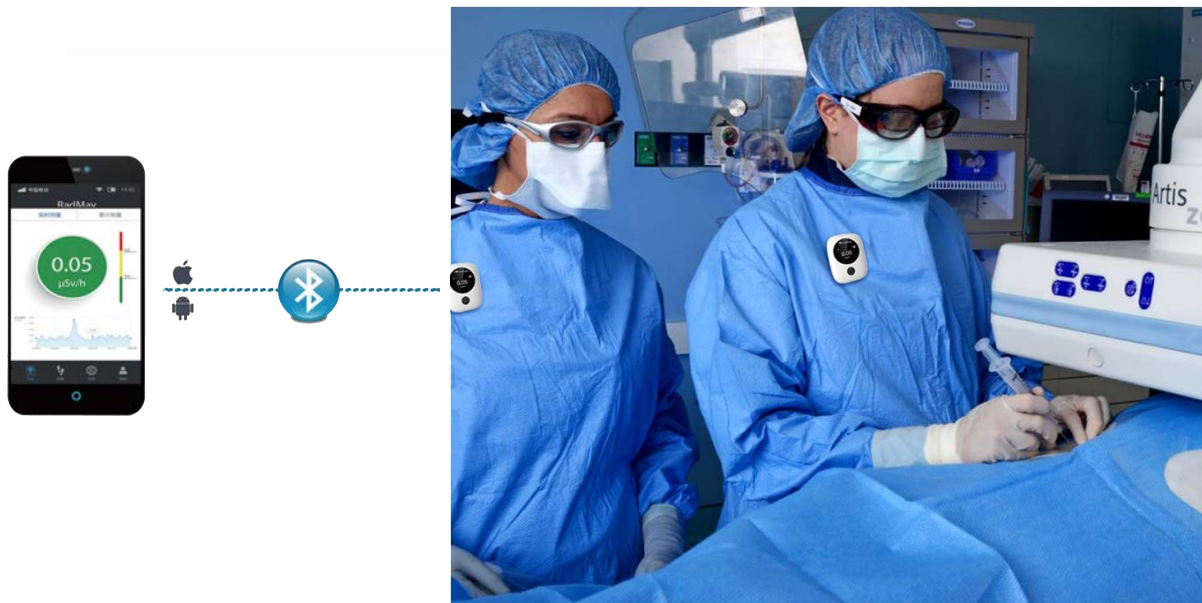


Front-Entry

# Parquet Personal eDosimeter

YSO+SiPM implements to personal dosimeter and packet detector with Bluetooth App software to your convenient daily radiation measurement and protection, Idea apply for workers of Nuclear Medicine department, PET Imaging center, Intervention treatment and Radiopharmaceutical industry to read the radiation dose exposure on time and alarm while excess the safety level.

## eDOSIMETER



**Instant response**  
Early alarm to avoid radiation exposure

**Supreme efficiency**  
Eliminating errors and false signal

**Stability and reliable**  
Low influencing from environmental condition

**Wireless**  
Communicating through wifi or bluebooth

### Specifications

Detector: YSO + SiPM

Measurement:  $\alpha$ ,  $\gamma$ , Photon ray

Unit: uSv/h, mSv/h, uSv, mSv, Sv

Dose rate: 0.01 uSv/h to 100 mSv/h

Cumulative Dose: 0.01uSv to 10 Sv

Energy: 30 Kev to 10 Mev

Alarm: Audio, and vibration

Wireless: Bluetooth

Ingress protection: IP 63

Size: H 60x W 46x D 20 mm

Weight: 40 g



real size

# The Smart Radiation Detector Series

State of the art technology integrate the highest sensitivity detection and SIPM to achieve radiation measurement and monitoring of various application in nuclear medicine, radiology, oncology, research laboratories, and others. Simple operation, fast responsivity, and accurate detection make your daily radiation safety work easy and effective.

## Specification:

- Measurement:  $\alpha, \beta, \gamma$ , and X-ray from 30 keV - 3 MeV
- Range: 0.01  $\mu\text{Sv/h}$  – 100 mSv/h
- Unit : CPS, Sv/h, Bq/cm<sup>2</sup>
- Sensitivity: 20 cps/ $\mu\text{Sv/h}$  (@662 keV Cs-137)
- End Window: Area > 45 mm<sup>2</sup>
- Alarm: audio, light, vibration
- Display: LED backlight screen
- Data management: history data recording and trend flow chart
- Power: Battery and Chargeable
- Waterproof: IP 65
- Weight: 350 g



### Model: HG 100

A high efficiency end window GM counter is built for detecting the radiation exposure in space and measuring the radiation contamination on surface.



### Model: HG 200

A Semi-conduct scintillation detector (YSO) with SIPM is built for detection the wide range photon and proton radiation.

## Specification:

- Measurement:  $\gamma$ , x ray from 15 keV to 10 MeV
- Range: 0.01 $\mu\text{Sv/h}$  to 10 Sv/h
- Unit:  $\mu\text{Sv/h}$ , mSv/h, Sv/h
- Sensitive: 150 cps/ $\mu\text{Sv/h}$  (@662 keV Cs-137)
- Alarm: audio, light, vibration
- Display: LED backlight screen
- Data management: history data recording and trend flow chart
- Communication: USB or Bluetooth
- Power: battery and chargeable
- Waterproof: IP 65
- Weight: 490 g

# Regional Radiation Monitoring System

The online radiation monitoring system is used for remote real-time monitoring, historical data querying, and statistical analysis in the nuclear medical department, PET imaging center, and radiopharmaceutical industry.

The system consists of platform software, network transmission, and field-end radiation detectors. The platform system may install in the control room or remote monitoring device through internet or WiFi.



Model	HA1100Med-P	HA1100Med-G	RP4006
Detector Type	Plastic Scintillator	G-M Tube (Energy Compensated)	H <sub>3</sub> Proportion & PE+H <sub>3</sub> BO <sub>3</sub>
Measuring Range	0.01 uSv/h ~ 10 Sv/h	0.01 uSv/h ~ 100 mSv/h	100 nSv/h ~ 100 mSv/h
Energy Range	30 keV ~ 3 MeV	48 keV ~ 3 MeV	0.025 eV(Thermal) ~ 14 MeV



HA1100Med-P



HA1100Med-G



RP4006

# Gas Retention System

Exhaust Gas Retention System is designed for storing potentially radioactive air from inside the hot cells during production, or following a malfunction of the synthesis modules and sends it to tanks for storage and decay.



- ⊙ The system is automatically in action whenever above preset radioactivity levels are measured by the Radiation Gas Monitoring System. In the air output, for one or more cells, or if the operator pushes the 'start' button.
- ⊙ Once the system is operating, the radioactive air is extracted and then sent to a compressing station. Finally it is stocked in cylinders until its decay. Once decayed, the air is unloaded outside through the output ducting of the general ventilation.

#### Technical Data

- Dimensions : W130cm x D83cm x H230cm
- Pump Power : 350W
- Power required : 110V/60Hz : 400W (modifiable by customer)
- Pump flow rate : 50 liter/min
- Plenum tank capacity : 50 liter
- Cylindrical tank capacity : 200 liter

Contact your local agent



Becquerel & Sievert  
[www.bqsv.com](http://www.bqsv.com)



[www.bqsv.com](http://www.bqsv.com)