



SKK

CATALOGUE

- Nuclear Medicine -


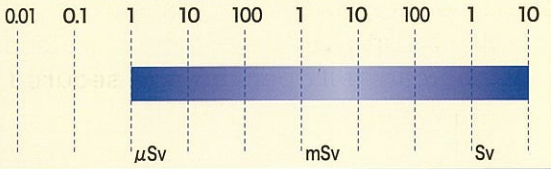
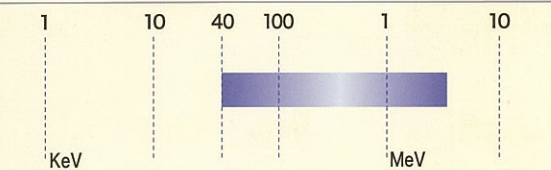
- **Radiation Measurement**


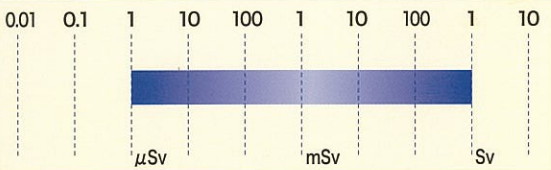
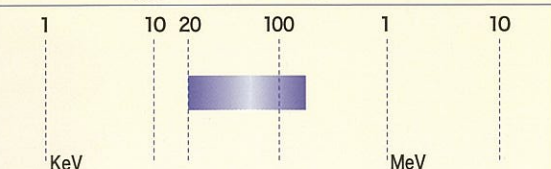
- **RI Facilities**

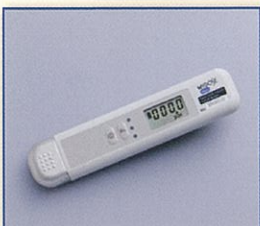
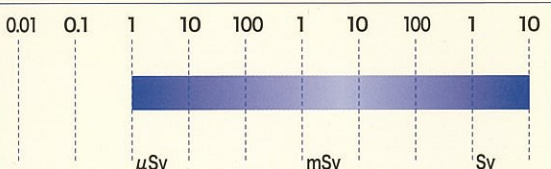
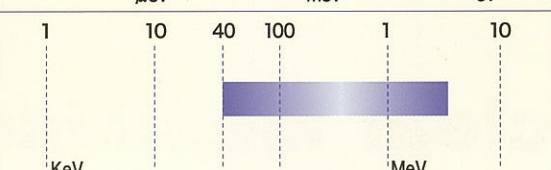


Electronic Pocket Dosimeters

ITEM	RADIATION	MEASUREMENT RANGE	REMARKS
	NAME MODEL	MEASUREMENT ENERGY	

	SK-119 For Gamma		General Dosimetry Dose and Dose Rate Data Holding Function
	MYDOSE mini PDM-122		

	SK-119A For X-ray		Medical Dosimetry Dose and Dose Rate Data Holding Function
	MYDOSE mini PDM-127		

	SK-119H For Gamma		General Dosimetry Dose and Dose Rate Alarm Data Holding Function
	MYDOSE mini PDM-222		


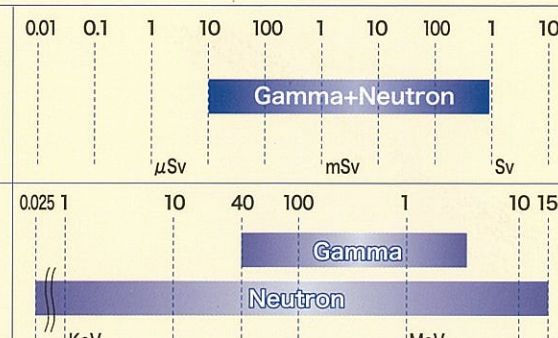


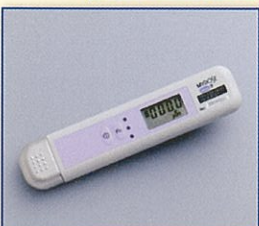
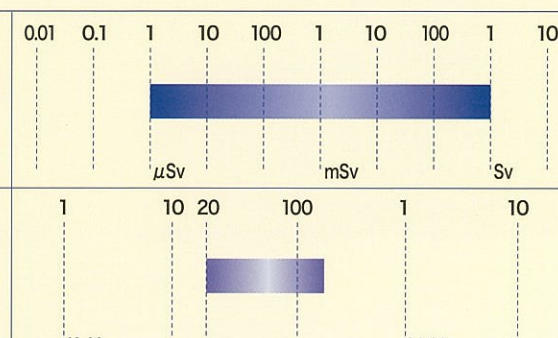
Lithium battery
for PDMs and ADMs
Type : CR2450


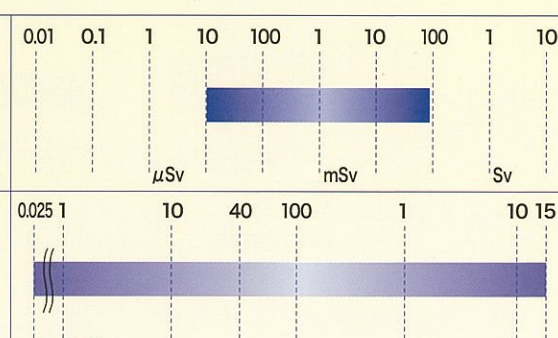


Alkaline battery
for alarm of ADM-353B
Type : LR44

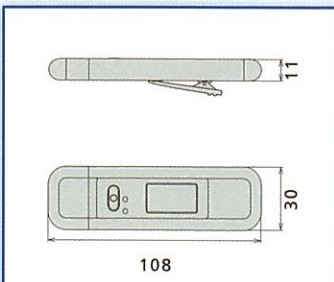
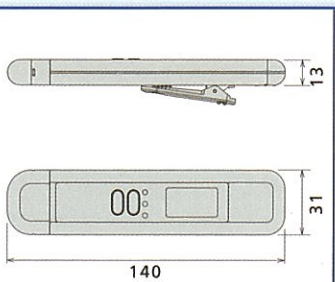
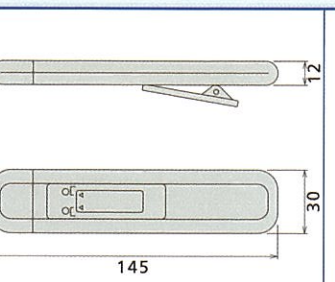
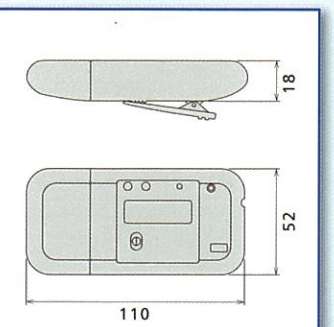
ITEM	RADIATION	MEASUREMENT RANGE	REMARKS
	NAME MODEL	MEASUREMENT ENERGY	

	SK-119J For Gamma For Neutron		Alarm No External Control (Switchless)
	MYDOSE alarm ADM-353B	0.01 0.1 1 10 100 1 10 100 1 10 μ Sv mSv Sv 0.025 1 10 40 100 1 10 15 KeV MeV	

	SK-119I For X-ray		Medical Dosimetry Dose and Dose Rate Alarm Data Holding Function
	MYDOSE mini PDM-227	0.01 0.1 1 10 100 1 10 100 1 10 μ Sv mSv Sv 1 10 20 100 1 10 KeV MeV	


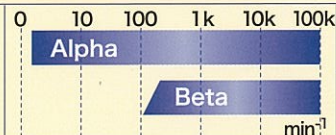
	SK-119E For Neutron		Neutron Dosimetry Gamma Rejection Data Holding Function
	MYDOSE mini PDM-313	0.01 0.1 1 10 100 1 10 100 1 10 μ Sv mSv Sv 0.025 1 10 40 100 1 10 15 KeV MeV	


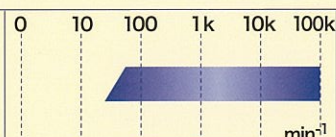
Dimensions and Weight


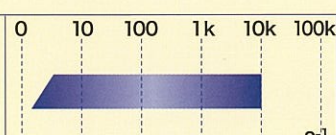
PDM-122/127	PDM-222/227	PDM-313	PDM-353B
			
Weight Approx. 40g (Unit : mm)	Weight Approx. 55g (Unit : mm)	Weight Approx. 70g (Unit : mm)	Weight Approx. 90g (Unit : mm)

Radioactive Surface Contamination Measurement

ITEM	NAME MODEL	RADIATION	MEASUREMENT RANGE	BATTERY
		DETECTOR	COUNTING RATE	CALIBRATION NUCLIDE
			ACCUMULATED COUNT	REMARKS

	SK-139A Scintillation Survey Meter TCS-362	For Alpha		C(Alkaline) x4
		For Beta		^{241}Am ^{36}Cl
		ZnS(Ag)+Plastic Scintillator 12x6cm	0 to 999,999	Coincidence counting by two super-micro PMTs

	SK-127C GM Survey Meter TGS-146B	For Beta		C(Alkaline) x4
				^{36}Cl
		End-window organic GM tube 50mm dia.	0 to 999,999	_____

	SK-136A Scintillation Survey Meter TCS-173C	For Gamma (I-125)		C(Alkaline) x4
				^{137}Cs
		NaI(Tl) Scintillator 50.8 dia.x3mm	0 to 999,999	Energy from 20 to 45 keV

APPLICATION	RADIATION		MODEL
Surface contamination measurement	Alpha		TCS-232B
	Alpha & Beta		TCS-362
	Beta		TGS-146B TCS-316H
	Gamma (I-125)		TCS-173C
Surface contamination and doserate measurements	Beta (Gamma)		TGS-131
Doserate measurement	Gamma	High sensitivity	TCS-171B • 172B • PDR-111 (Pocket Type)
	X-ray	Basic	ICS-331B
		High doserate	ICS-323C
	Neutron		TPS-451C

ITEM	NAME MODEL	RADIATION	MEASUREMENT RANGE	BATTERY
		DETECTOR	DOSE RATE H*(10)	CALIBRATION NUCLIDE
			ACCUMULATED COUNT	REMARKS
	SK-124B Ionization chamber Survey Meter ICS-323C	For X-ray /Gamma		AA(Alkaline) ×4
		Cylindrical Ionization Chamber	0.3 to 10 μSv	137Cs With Beta Detection
	SK-138A Energy Compensated Scintillation Survey Meter TCS-172B	For Gamma /X-ray		C(Alkaline) ×4
		NaI(Tl) Scintillator 25.4 dia.×25.4mm	_____	137Cs Sv/h-s-1 Switching S-1:No Compensation
	SK-100C Neutron Survey Meter TPS-451C	For Neutron		Lithium ×1
		³ He Proportional Counter tube	0.01 to 9,999 μSv (Digital)	252Cf _____
	SK-111A Pocket Survey Meter PDR-111	For Gamma /X-ray		AA(Alkaline) ×1
		CsI Scintillator	0.001 to 1.999 μSv/h 2.00 to 19.99 μSv/h Auto-range-switching	137Cs <ul style="list-style-type: none"> •High sensitivity •With AEM* function •Enrgy : 50 keV and above •Weight : 220g

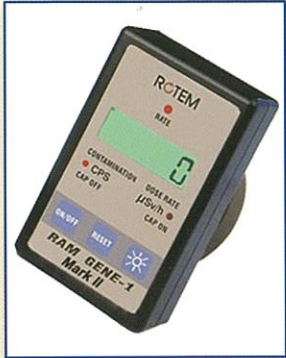
*AEM : Accuracy Enhancing Mode

Radiological Emergency Response Solutions

— For surface contamination measurement / For air dose rate measurement —

RAM GENE-1 MARK2

SK-649E



Detector	: 1.75" Pancake GM tube - LND73118 or equivalent
Units	: Counts per second (CPS) or counts per minute (CPM) and $\mu\text{Sv/h}$ or mR/h.
Count Range	: 0 - 42,000 cps
Measuring Range	: 0.05 $\mu\text{Sv/h}$ to 7mSv/h (5 $\mu\text{R/h}$ to 700mR/h)
Power Source	: Standard 9V alkaline battery - provides approximately 50 hours continuous use with speaker off. Automatic battery check under full load.
Dimensions	: 11.0cm x 6.7cm x 7.4cm (4.3"x 2.6"x 2.9")
Weight	: 565 g (1.25 lbs)

— For air dose rate measurement —

RAM GAM-1

SK-651

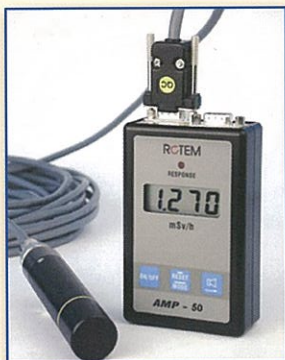


Detector	: Energy compensated GM tube - ZP1201 or equivalent
Units	: μSv and $\mu\text{Sv/h}$ or mR and mR/h
Display Range	: 0.5 $\mu\text{Sv/h}$ to 9999 $\mu\text{Sv/h}$ (0.05 mR/h to 999 mR/h)
Energy Range	: 50keV to 20MeV
Power Source	: Standard 9V alkaline battery - provides approximately 50 hours continuous use with speaker off. Automatic battery check under full load.
Dimensions	: 13 cm x 7.2 cm x 3.4 cm (5.12" x 2.83" x 1.34")
Weight	: 280 g (0.62 lbs)

— a GM tube-based low range Area Monitor —

AMP-50 Area Monitor

SK-655



Detector	: (ZP-1201, or equivalent)
Units	: mR/h and mR or m Sv/h and m Sv
Measuring Range	: 10 $\mu\text{R/h}$ to 4 R/h (0.1 $\mu\text{Sv/h}$ to 40 mSv/h)
Power Source	: One 9-volt cell battery or external 9V power supply, 50 hours minimum continuous operation, using an alkaline battery (speaker off) Automatic battery check under full load (without backlighting)
Dimensions	: Meter: 2.7" wide, 4.7" high, 1.25" deep Detector: Length:6.2" , diameter:1.3
Weight	: Meter: 340 g (0.76 lbs) including battery Detector: 131 g (0.29 lbs) without cable

RAM DA-2000 SERIES - MULTI-PURPOSE SURVEY METER

The RAM DA-2000 series was developed to solve the problem of rapid instrument obsolescence. The flexibility and modularity of the RAM DA makes it possible to maintain the highest standards of safety, by using different types of detectors for different applications.

RAM DA-2000

SK-640A

RAM DA-2000 series: Without internal detector



Applications:

- Nuclear Power Plants, nuclear and medical research centers, H.P. departments,
- radiology clinics, radiation and environmental protection authorities.

Features:

- Communication to PC Calendar/Clock, Non-volatile memory.
- Two output relay contacts for threshold and failure alarm.
- RMV (Rotem Meter View) compatible.
- Different types of detectors can be connected.
- Automatic detector identification and selection of readout units.
- Freeze mode to record the highest dose rate.
- Manually set alarm threshold.
- Low battery & Overflow alarm.
- Ability to display several units of measurement (cps, cpm, $\mu\text{Sv/h}$, mR/h, counts...).

MAIN DETECTORS For RAM DA 2000

GM-40 Series (GM-40, GM-41, GM-42)

SK-646/647/648



IRP-51-H*(10)
version available

For Gamma Radiation over a very wide range. Based on different types of energy compensated GM tubes. Extended hook-up cable of up to 100 meters can be used.

Measuring Range:

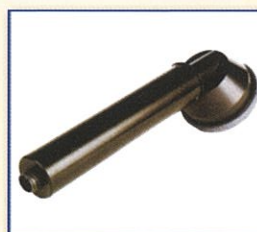
GM-40: 250 $\mu\text{Sv/h}$ to 10 Sv/h
(25 mR/h to 1000 R/h)

GM-41: 50 $\mu\text{Sv/h}$ to 1 Sv/h
(5 mR/h to 100 R/h)

GM-42: 0.5 $\mu\text{Sv/h}$ to 10 mSv/h
(50 $\mu\text{R/h}$ to 1 R/h)

GM-10 Detector

SK-645



Efficient surface monitoring of alpha, beta and gamma radiation contamination, based on 1 3/4" Pancake GM tube.

Sensitivity (137Cs):

~350 cpm/ $\mu\text{Sv/h}$
(3500 cpm/mR/h)

Measuring Range:

0 to 42,000 cps

PM-10 Detector

SK-643



Gamma scintillation probe for improved x-ray and low energy gamma radiation detection, based on thin NaI 2" diameter scintillator (2" dia. X 0.04" thickness). S.C.A. can be set within the energy range, optimized for 125I detection and/or other isotopes.

Energy range:
10 to 80 keV

¹²⁵I surface sensitivity:
440 cpm/Bqcm²

Measuring range:
0 to 50,000 cps

IC-10 Detector

SK-641A



Wide range gamma, x-ray and beta radiation measurement. Based on 0.5 liter atmospheric ionization chamber. Uses special features and advanced technology.

Measuring Range:

1.0 $\mu\text{Sv/h}$ to 250 mSv/h
(0.1 mR/h to 25 R/h)

IRP-51-H*(10)
version available

Materials and Prevention of Loss on Ray Sources to the Outside of Controlled Areas

Portable Area Monitor for Gamma Ray

- For facilities using gamma ray
- Two models, high-sensitivity and wide-range, available to suit specific target dose rate
- Detector cable extendable up to 40 m
- Large display
- Equipped with alarm and external signal output
- Belt and wall-mounting fixtures provided

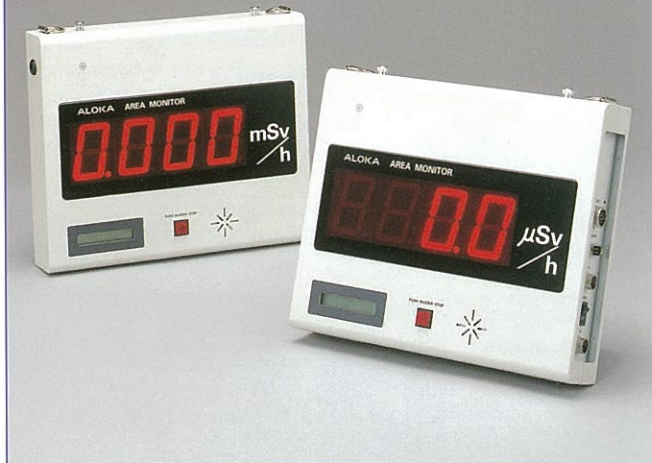
Model	MAR-781 (SK-146A)	MAR-782 (SK-146B)
Radiation detected	Gamma ray, X-ray	
Detector	Silicon semiconductor detector	
Measurement energy range	Approx. 50keV to 6MeV	
Measurement range	0.1 to 999.9 μ Sv/h	0.001 to 999.9 μ Sv/h
Accuracy	Within $\pm 10\%$ (1 to 999.9 μ Sv/h) with ^{137}Cs ± 1 digit (0.1 to 0.9 μ Sv/h)	Within $\pm 10\%$ (0.01 to 99.99 mSv/h) with ^{137}Cs ± 1 digit (0.001 to 0.009 mSv/h)
Alarm display output	Red LED lights up and buzzer turns on. Numerical indication flashes (returns to ON condition once buzzer stops) No-voltage contact output (30-VDC, 1-A resistance load)	
Data output	Conforms to RS422, RS232C, or current loop communication (RS422 output set at the factory. For RS232C or current loop communication, internal wiring changed on request.)	
Size	Approx. (W)300 x (D)55 x (H)250mm	
Weight	Approx. 2.3kg	

SK-146A

MAR-782
(wide-range type)
■ Measurement range
: 0.001 to 99.99 mSv/h

SK-146B

MAR-781
(high-sensitivity type)
■ Measurement range
: 0.1 to 999.9 μ Sv/h

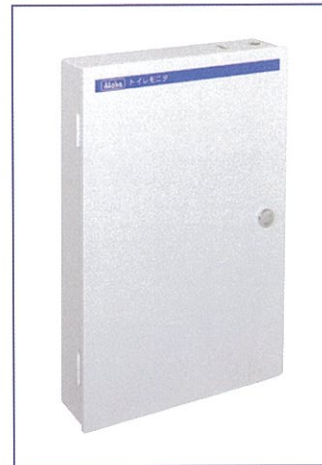


Toilet Monitor

The toilet monitor is installed in the toilet in combining with the flush valve in a tightly closed RI medical treatment room, so that a possible outflow of the tightly closed RI attached to the patient from the toilet is prevented.

detector	$\phi 1 \times 1$ inch NaI (Tl) scintillator
measurable rays	γ ray (^{192}Ir , ^{198}Au , ^{137}Cs , etc.)
measurable range	$1.0 \times 10^{-1} \sim 1.0 \times 10^4 \text{ s}^{-1}$
self diagnosis	observation of soundness of high-voltage power supply etc.
outer size	approx. (W) 38 x (D) 15 x (H) 58cm
weight	approx. 35kg
power supply	AC100V, 100VA

SK-157



Toilet Monitor

Materials Carrying Out Monitor

The materials carrying out monitor is installed in the contamination test room, which prevents diffusion of RI contamination attached to the hand-carried materials.

detector	plastic made scintillator
measurable rays	β ray (γ ray)
measurable range	U_{235} : $1 \times 10^0 \sim 1 \times 10^3 \text{ Bq/cm}^2$
outer size	approx. (W) 70 x (D) 57 x (H) 118cm
weight	approx. 60kg
power supply	AC100V, 200VA

SK-160



Hand-Foot Cloth Monitor

Cutting-edge Technologies Packed in Stylish Units

The MBR-201H and MBR-301B is a hand, foot and clothing monitor featuring a unique design, incorporate know-how and expertise accumulated by Aloka over many years.

Alarm setting in Bq/m²

The MBR-201H and MBR-301B store equipment efficiency in memory at the time of inspection to allow entry of alarm setting using the Bq/cm² unit. This eliminates the need to use a desktop calculator for calculations.

Time-saving function (patented by Aloka)

Measurements are completed rapidly if the subject is not contaminated, allowing personnel to leave the worksite quickly.

Automatic background subtraction

The background contamination level is continually measured, and background subtraction is performed based on the latest data.

Self-contamination check

If contamination of hands or feet is detected, a contamination check is automatically initiated to determine whether any contamination remains on the detector. This prevents the spread of contamination.

Large-screen color TFT LCD

The color LCD shows equipment status, measurement results and other information. The clear and readable display indicate any contaminated areas detected.

Advanced shape and design

The unit is shaped for easy insertion of hands, and the display device is angled for easy visibility. The product design offers both functionality and stylish appearance.

Language selection (Japanese and English)

Users can select between Japanese and English for the display language to ensure ease of use by visitors, researchers and students from overseas.

Extensive range of maintenance functions

The MBR-201H and MBR-301B come equipped with a wide range of self-diagnostic functions, store contamination data and malfunction history in memory. In addition, efficiency data can be stored by entering source intensity and following the instructions displayed. These functions ensure not just ease of operation by users, but ease of management by administrative staff.



ATOMLAB™ 500 Dose Calibrator

Proven performance for fast, accurate measurements. One dose calibrator for all your requirements.

UPGRADE-ABILITY

The Atomlab™ 500 Dose Calibrator can be upgraded to include a fully functioning Atomlab™ Wipe Test Counter. The “Smart Display” recognizes the chamber / detector configuration and instantly reconfigures the screen to the appropriate icons.



Easy to use, large color touch screen display with intuitive menus.

- Automatic range selection; ranges up to 100 Curies of Tc-99m or 25 Curies of F-18
- Pre-programmed for 88 most commonly used radionuclides; any 12 can be conveniently touch selected
- Displays in Curies or Becquerels
- Small footprint economizes workspace
- Ultra-fast response
- Robust software and extensive functionality
- Report and label printers available
- The USB ports also allow software upgrades via USB memory devices.
- Desktop or wall mount display
- Communicates with most commercially available NM management systems via bi-directional serial communications port
- USB ports offer the ability to accommodate a USB mouse and printing devices.
- Two-year warranty

Standard Apps for Atomlab 500 include

- Automated Quality Assurance Apps
 - Constancy and Expanded Constancy
 - Linearity and Auto Linearity
 - Accuracy
 - Geometry
- Nuclear Pharmacy Apps:
 - Future dose computation
 - Volume determination
 - Inventory control of 25 samples, correcting volume, activity and moly concentration
- Multiple Detector Apps:
 - Manages multiple ionization chambers
- Wipe Test Counter Apps:
 - Upgradeable at any time to include a wipe test counter

One dose calibrator that can be used for a wide variety of Nuclear Medicine, PET and radioimmunotherapy applications.

Atomlab™ 500

The Atomlab™ 500 provides fast, accurate radionuclide activity measurements with performance that easily complies with the most stringent regulatory requirements. The system consists of a new low pressure ionization chamber with redesigned seal, electrometer with extraordinary linearity and an autoranging touch screen color display.

Now one dose calibrator can be used for a wide variety of nuclear medicine, PET and radioimmunotherapy applications. Additionally, there are advanced, but easy-to-use programs for nuclear pharmacy, radiochemistry and radiochromatography.

Activity measurements are performed by the microprocessor controlled electrometer located within the chamber assembly. The chamber is shielded with .25" (6.3 mm) lead. It can be located up to eight feet away from the display unit. Chamber bias is generated by an electronic high voltage supply, eliminating the need for expensive battery changes.

Every element of the design and technical development will increase dose accuracy, department productivity and regulation compliance. The attractive and intuitive human interface guides the user through each operation. Software can easily be updated via the Biodex website or by using a convenient memory card. The touch-screen display can rest on a bench or mount on the wall of a hot lab, hot cell or laminar flow hood.

In addition to powerful self diagnostics, the Atomlab 500 includes an exclusive chamber monitoring technology to assure longer life and accuracy. Integrated pressure and temperature sensors feedback data so that the influence of gas pressure change will not effect an accurate reading.

Operation

The system is easy to use. There are 12 isotope selection touch keys pre-programmed for the most commonly used radionuclides. Any of those keys can be reprogrammed by the user for a desired isotope. There are 88 isotope-specific dial values listed in the library. Dial values can easily be changed if required.

Activity is displayed on the touch screen color display in either curie or becquerel units. Background correction is performed at the touch of a button. Range selection is automatic, from .01 microcurie to 100 Curies of Tc-99m or 25 Curies of F-18.

Accuracy

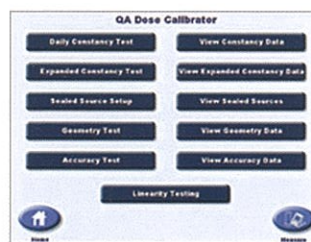
Accuracy Test Dose Calibrator			
Isotopes	Source ID		
Co-57	BM065-57-07-1		
Count Activity	Calculated Standard	Acceptable Values ± 1%	
First	3.31 mCi	3.31 mCi	2.5%
Second	3.31 mCi	3.31 mCi	2.4%
Third	3.31 mCi	3.31 mCi	1.8%
Average	3.31 mCi	3.31 mCi	2.4%

Atomlab Dose Calibrators have consistently proven to be highly accurate. Biodex and chamber manufacturer Sun Nuclear Corporation have participated in the isotope program

sponsored by National Institute of Standards and Technology.

Each month a certified isotope is received from National Institute of Standards and Technology and is measured in the Atomlab™ Dose Calibrator, producing direct traceability to National Institute of Standards and Technology.

Quality Assurance



The Atomlab 500 has been designed to make life easier. The extensive selection of quality assurance applications streamlines and simplifies hot lab administration

requirements. The system stores and decay corrects multiple reference sources and compares the measured activity to the calculated activity for the daily constancy test.

Linearity tests can be performed in the traditional manual method or by a fully automated program that allows for readings from a source to be taken, and automatically recorded at specified intervals. The system will graph the results.

The attenuation tube test for linearity can be performed using software that will guide the user through the procedure, store the values and make all calculations.

Communications

RS-232 port and two USB ports to communicate in real time with the most commercially available nuclear medicine management systems, connect to external monitor or upload software upgrades.

Radioactive Facilities Monitoring System

The radioactive facilities, which use radioactive isotopes (RI) or radiation for various research works or medical treatments, are controlled with the following purposes:

- To protect and maintain the environment around the radioactive facilities (environmental control)
- To protect the health condition of the human beings working in the radioactive facilities (health control)
- To monitor the RI treatments inside the radioactive facilities (material control)

Amount of Radioactive Rays in the Radioactive Facilities

Monitoring the volume rate of radioactive rays in the facilities and arousing the warning to the people there:

- Area monitor for high level γ rays
- Area monitor for γ rays
- Area monitor for neutron rays

Density of RI in the Air inside the Radioactive Facilities

Continuous monitoring the RI density in the air inside the facilities and providing the calculation data of the inner irradiated volume:

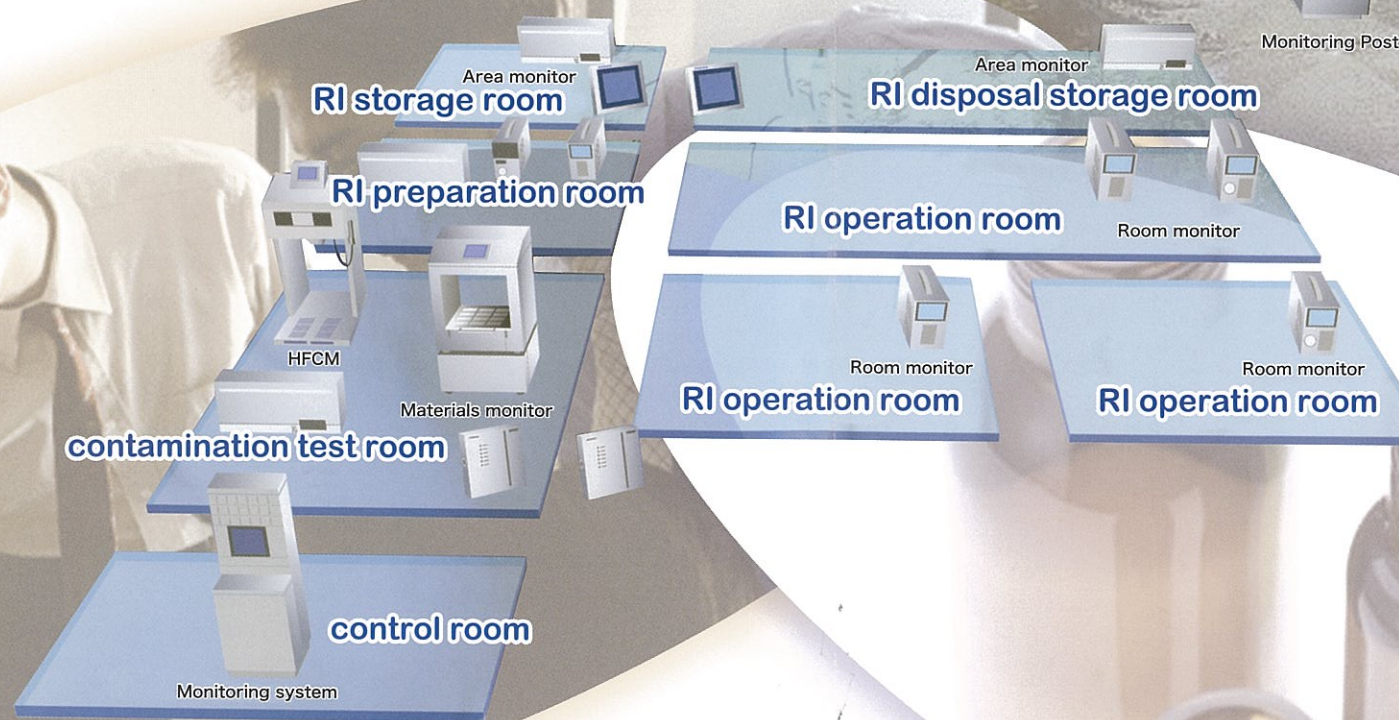
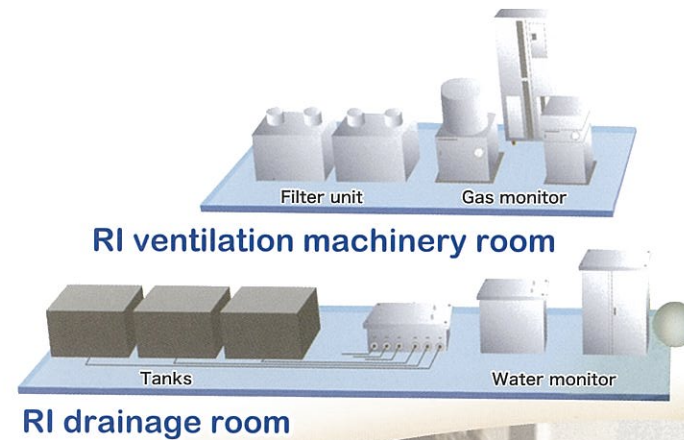
- Room dust monitor
- Room iodine monitor
- Room gas monitor

Health Control

Control of Getting In and Out the Room

Control of the entrance and exit of non-authorized people in the facilities:

- Entrance/Exit Reader (magnetic card, non-contact, 2 dimensional code, bar code, finger print, tenkey)



Density of Radioactive Isotopes during Ventilation

Continuous monitoring the density of RI in the ventilation exhausted from the ventilator opening in the radioactive facilities:

- β (γ) rays gas monitor
- γ rays gas monitor
- Automatic iodine monitor
- α rays dust monitor
- β rays dust monitor

Density of Radioactive Isotopes during Drainage

Measuring the RI density during drainage from the drainage tanks such as pooling or dilution tank in the radioactive facilities:

In connection with the drainage tanks, automatic processing of the total operation from the measurement up to dilution is available:

- β ray water monitor
- High level energy β ray water monitor
- γ ray water monitor

Environmental Control

Volume of Rays in the Circumference of Radioactive Operation Facilities

Continuous monitoring the volume rate of the rays in the circumference of radioactive operation facilities, or in the residential areas for the people working in the radioactive operation facilities:

- γ rays monitoring post
- Neutron rays monitoring post

Protection of Diffusion from RI Contamination outside the Control Areas

Protecting the diffusion from RI contamination through the attached RI onto the hands, feet or clothes:

- Hand-Foot Cloth monitor
- Materials carrying out monitor

Protection of Loss on the Ray Sources from the Radioactive Facilities

Protecting the outflow of tightly closed RI attached to the patients from the toilet:

- Toilet monitor

RI Control Treated in the Radioactive Facilities

Book making for RI control record from the purchase, use, disposal up to delivery of disposed materials:

Real time checking the updated RI use condition and the various regulated limited values:

- Isotope treating control system
- User input system

Material Control

Radioisotope Dispenser

AZ-2000N

The RI Automatic Dispenser AZ-2000N is designed to provide protection from exposure while dispensing, labeling and mixing the radiopharmaceutical, leads to more efficient working environment .

Dispense highly accurate

Automatic needle centering mechanism/Automatic detection of syringe size/Air purge function/Correction of detection efficiency by each syringe size

Improve working efficiency

Memory function of daily setting/Easy and simple operation

Provide protection of hand and fingers from exposure

Remarkably reduce radiation exposure while working at Nuclear Medicine facilities

SK-679

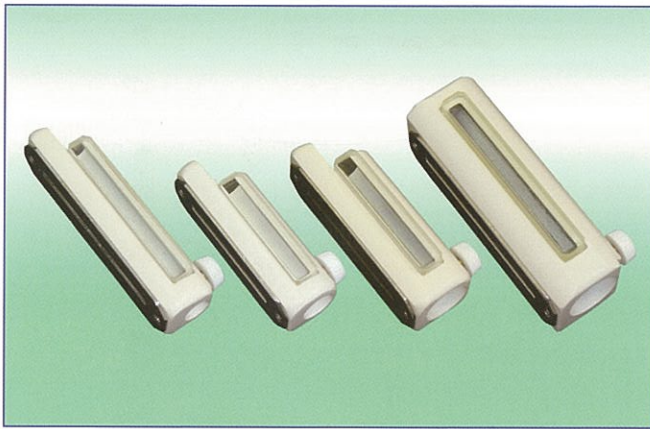


Specifications

Model Name	AZ-2000N
Dimension	Dispenser : 410W × 425D × 670H(mm) (including protrusion) Exclusive Wagon : 480W × 520D × 745H(mm)
Weight	Dispenser : Approx.55kg Exclusive wagon Approx.22kg
Power Supply	AC 100-240V, 50/60 Hz
Accuracy	Activity : ±10% Volume : ±2%
Detector	Nal(Tl)Scintillator
Nuclides	^{99m} Tc, ⁶⁷ Ga, ²⁰¹ Tl, ¹¹¹ In, ¹²³ I
Syringe Shield	1ml, 2.5ml, 5ml, 10ml, Pb3mm (Lead glass : Pb1mm equivalent)
Vial Shield	Pb4.5mm
Shield	Main part : Pb5mm Lead glass : Pb1mm equivalent

Accessories

Operation



Syringe Shield



Vital Shield

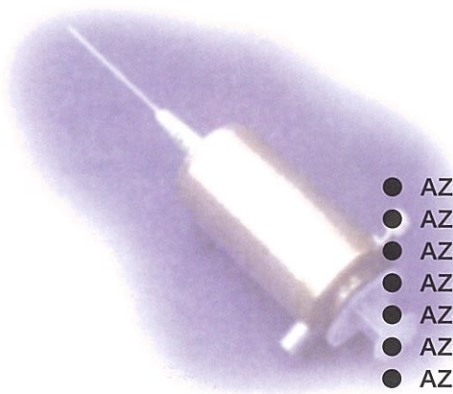
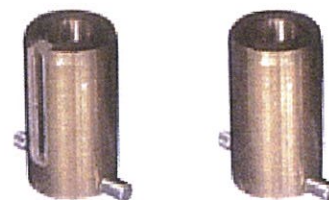
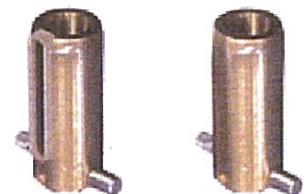


Exclusive Wagon

Tungsten Syringe Shield

Accommodate any international syringes

ANZAI tungsten syringe shield is available in 4mm and 8mm thickness. Both types are available with lead glass or without lead glass. Please choose a syringe to meet your needs.



- AZ-504T-425 Syringe shield for 2.5mL, tungsten thickness 4mm
- AZ-504T-425P Syringe shield with lead glass for 2.5mL, tungsten thickness 4mm
- AZ-504T-825 Syringe shield for 2.5mL, tungsten thickness 8mm
- AZ-504T-825P Syringe shield with lead glass for 2.5mL, tungsten thickness 8mm
- AZ-504T-450 Syringe shield for 5mL, tungsten thickness 4mm
- AZ-504T-450P Syringe shield with lead glass for 5mL, tungsten thickness 4mm
- AZ-504T-850 Syringe shield for 5mL, tungsten thickness 8mm
- AZ-504T-850P Syringe shield with lead glass for 5mL, tungsten thickness 8mm

RI Fire-Resistant Lead Storage Box

Fire- resistant duration: 2 hours

This means, the inside Box temperature keeps 180°C or lower during heating the Box up to 1,000°C on the outside surface for 2 hours.



SK-928(T30)

Model: SK-928 (T30)

Covering Quality: with lead thickness 30mm

Finish Work: acryl-urethane resin coating, color: ivory

Outer Measure: W606 x D556 x H788 (projection not included)

Valid Inner Measure: W376 x D 297 x H468 (52.3 liter)

Mass: about 510Kg

Plate Valid Measure: W372 x D290 with max. load 40Kg

Lead Thickness	Model
10mm	SK-928 (T10)
20mm	SK-928 (T20)
30mm	SK-928 (T30)
40mm	SK-928 (T40)
50mm	SK-928 (T50)

<Cesium Storage Container>

This storage container with display in Bq SK-945 is designed to easily verify the presence of radioactive materials.

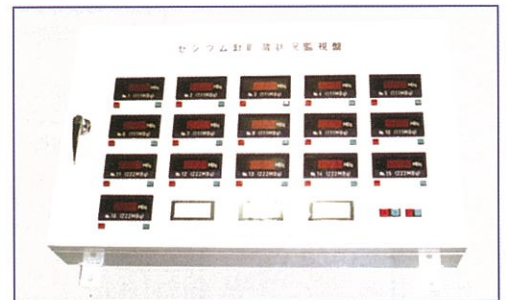
At each beginning and ending of the treatment, in-output and the value in Bq of the source is very accurately checked by the control room, which is resulted with playing a very important role of controlling up and downgrade of the irradiated volume and possible loss on the source.

- 1) The storage container and the monitoring panel is located separately, and the monitoring panel is installed in a separate room, so that the storage condition of the ray source is checked instantly.
- 2) The value in Bq of each source in the storage container is digitally displayed.
- 3) In order to protect the GM tube, the display lamp is getting automatically off in every 1 to 1.5 minutes.

Cesium Storage Box

Features

- Digital display of the value in Bq of each source in the storage box
- Lamp indication of the lock mechanism on the door of the storage box, and in/output of the needle stick.



Monitoring Panel with display in Bq of Cesium Storage Container



Cesium Storage Container with display in Bq

SKIK

RI Facilities

RI Drain Facilities Construction

RI Drain System

- There is a strict regulation, that the water to be drained out of the RI controlled zone must safely be pooled and diluted below the limited value of the radioactive density. It is also required to install 6 inspection sections.
- In case the location of the RI drain system facilities and the control room are separated away in some distance, it is required to install the control panel in both the RI drain system facilities and the control room in order to control the drain system directly within the facilities and by the remote control in the control room as well.
- It is important to install a graphic panel on the remote control panel to visibly check the ongoing situation.

SK-458

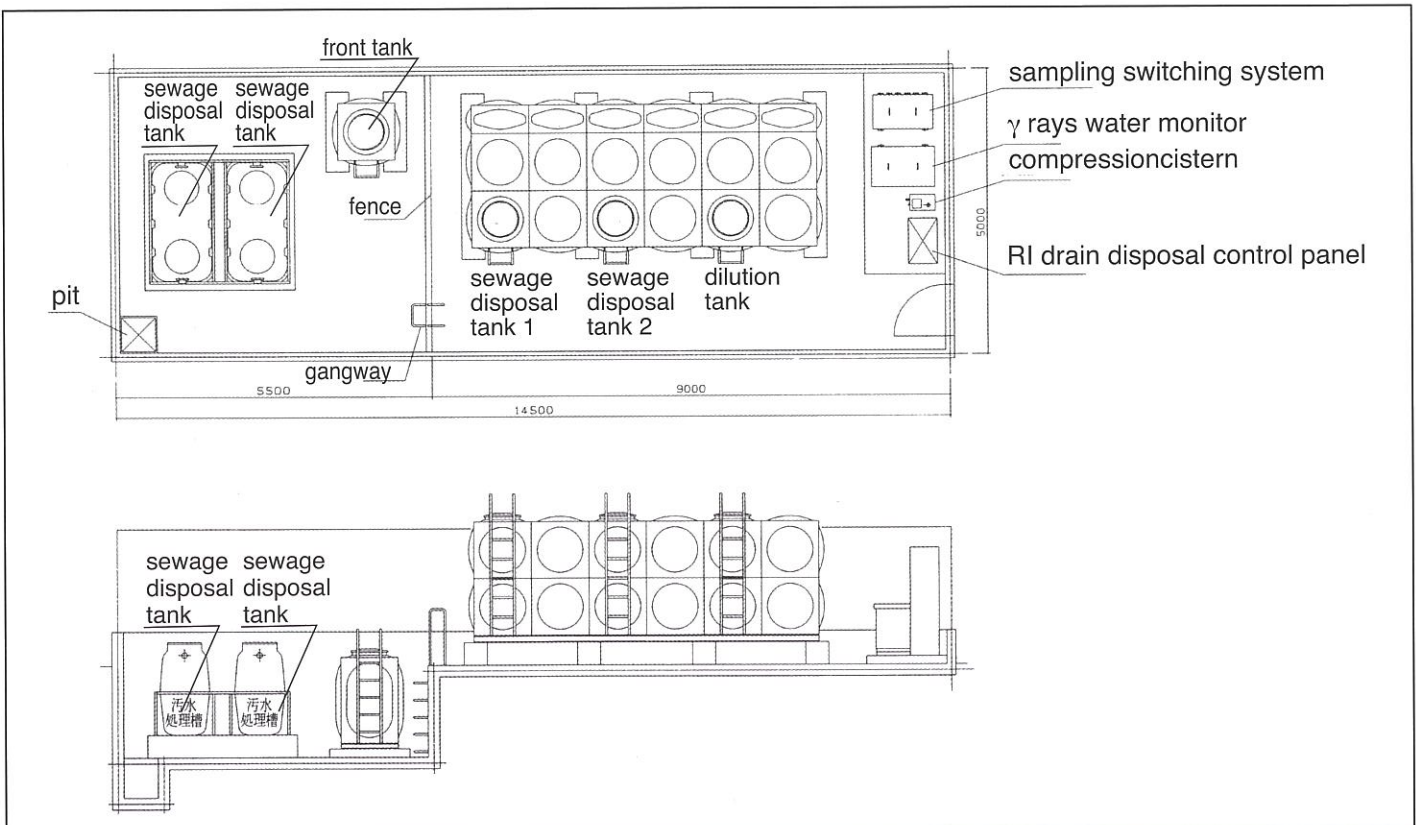


Specifications

product name	quantity	specifications
sewage coming in	2	FRP made septic tank of combined treatment
front tank	1	stainless444 1000×1000×1000mm
pooling tank	2	stainless444 1000×2000×3000mm
dilution tank	1	stainless444 1000×2000×3000mm
drain control panel	1	AC200V 10KVA AC100V 4KVA 1000×2000×600mm 200kg
water monitor	1	AC100V750VA 970×1100×1000mm

Liquid Waste Tank (Pooling Tank, Dilution Tank)

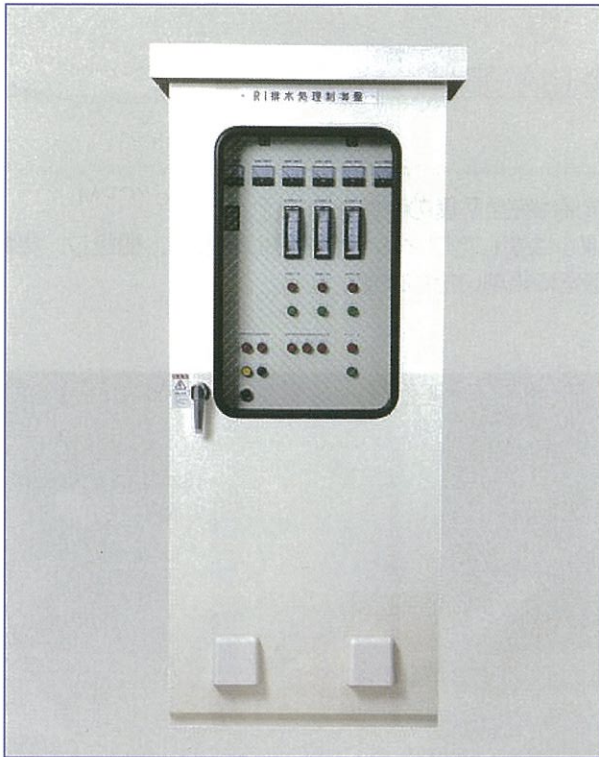
Recommended Sample



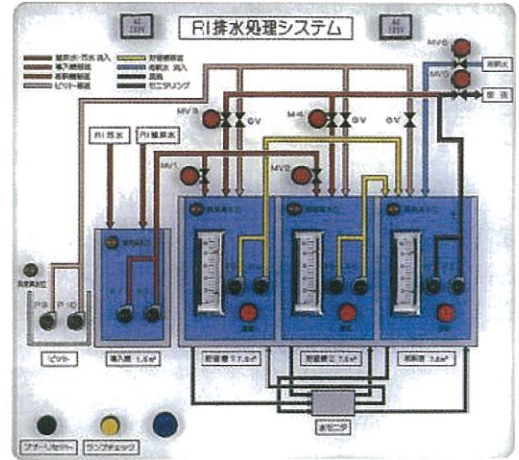
RI Drain Facilities Construction

RI Drain Control Panel

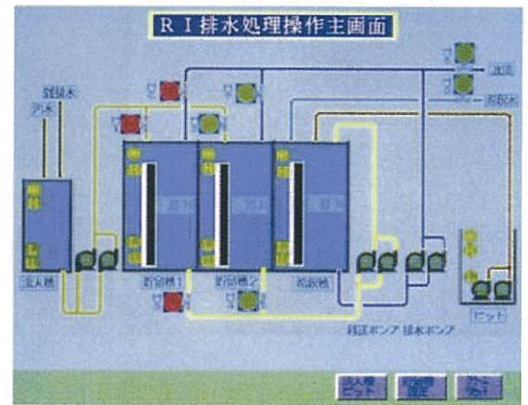
SK-2081



Graphic Panel Screen

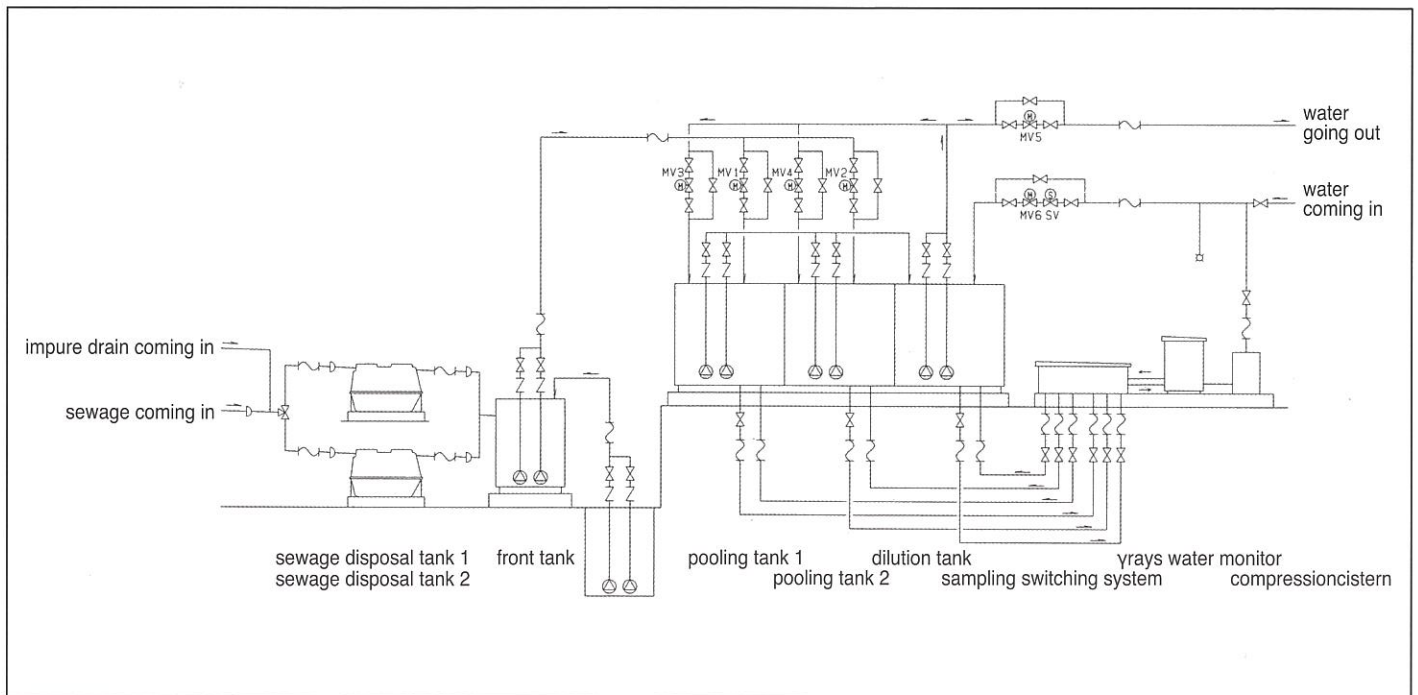


Touch Panel Screen



On the RI Drain Control Panel, you can control the whole drain system by safely pooling and diluting the disposed liquid coming from the RI controlled area, lowering the concentration down to the level required by the regulation, and after that, releasing it. This is installed in the RI Drain Facilities.

Flow Sheet Sample



The drain process in many RI drain systems, or the drain of the disposed urine after cleaning in the cleaning tank including RI at the hospital or other health care facilities needs to install a front tank, in which the drain comes in and pumped up to each of the RI pooling tank.

RI Filter Unit

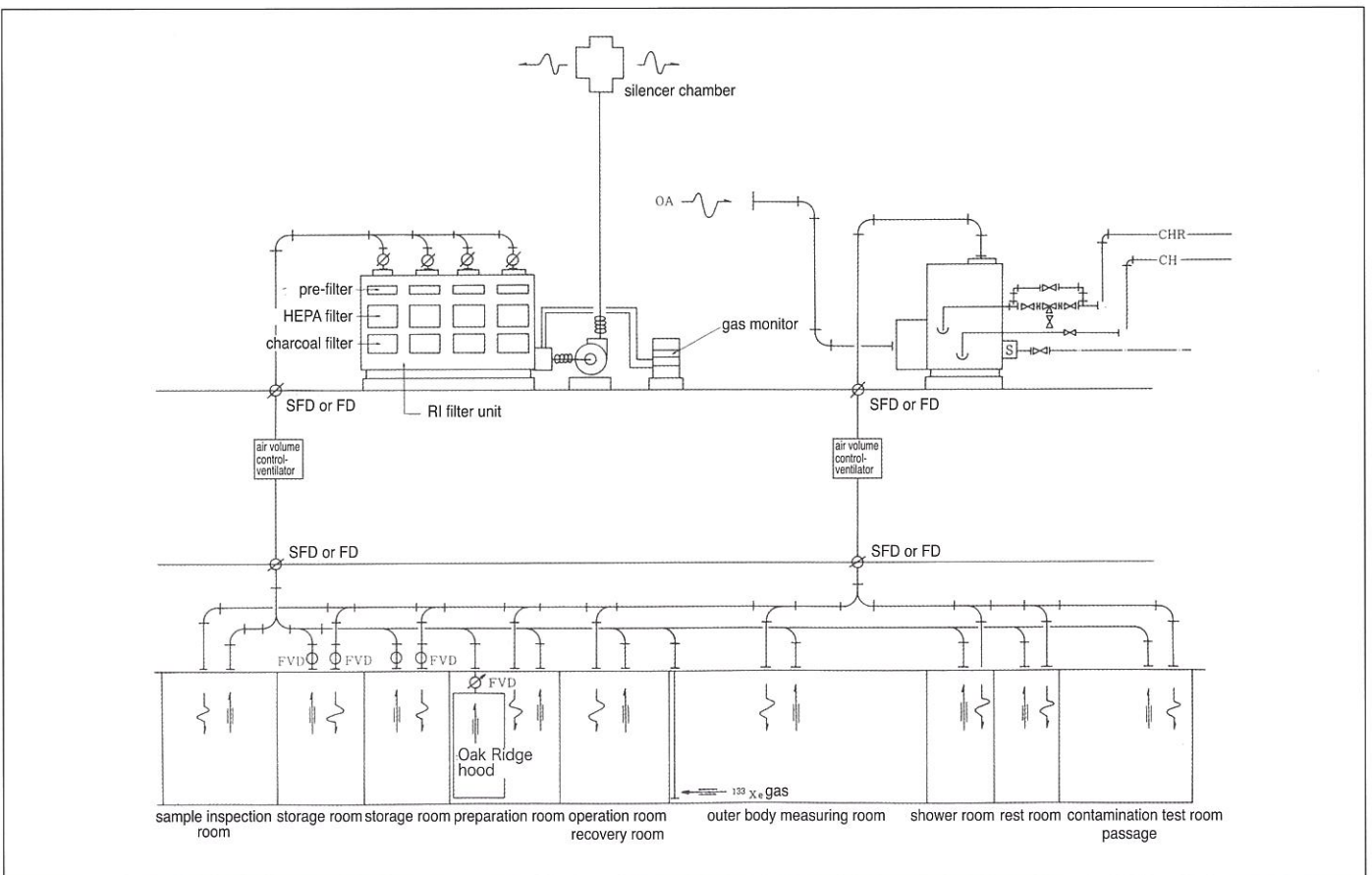
RI Filter Unit is used for removal of dust and gas during the ventilation process at the radio active materials handling facilities, and its completely sealed up filter unit provides you with a safe exchange of the filter.



Incineration Reduction Type Filter

- Outer Dimensions: 610mm x 610mm x 292mm
- Standard Air Volume: 28.3m³/min
- Compression loss, initial (Pa): 250Pa or less
- Compression loss, final (Pa): 500Pa or less
- Collection Efficiency: 99.97%
- Outer Frame: Plywood (veneer)
- Filtering Materials: mixture of glass fiber and synthetic fiber

RI Ventilation System Flow Chart (for use in hospital)



Hood with Fire Resistant Lead Storage Box



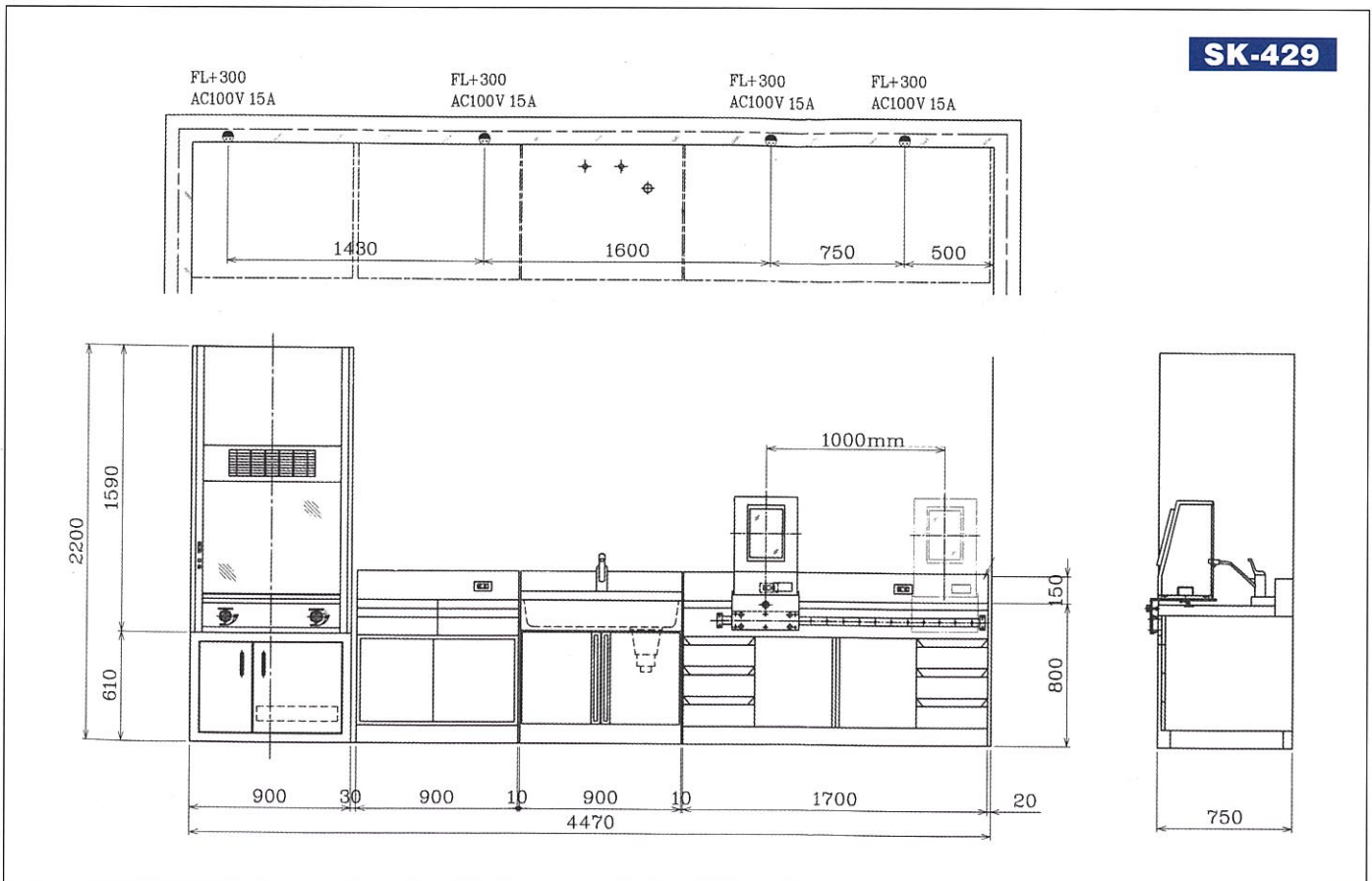
SK-422



SK-428

- SK-421 (w900) ■ SK-422 (w1200) ■ SK-423 (w1500)
- SK-424 (w1800) ■ SK-425 (w2100)

RI Laboratory System Unit



Measurement of Working Environments

Various Measurements

<Measurement of Density of Radio Active Materials in the Air>

In open facilities where the people are working with radioactive isotopes, sampling air is taken and measured once a month.

<Measurement of Surface Contamination Density of Radio Active Materials>

the legal regulation for controlling the electrolytic radioactive protection requires to measure the radio active contamination level on the surface of the places or goods with human contacts. The measurement is performed by direct or indirect methods.

<Measurement of Ray Absorbed Rate>

It is very critical to reduce the irradiated level with the people working with radioactive materials. The periodical measurement of the radioactive contaminated level must be performed, at least, once a month for the open facilities to treat the radioactive isotopes, and, at least, once in less than 6 months for the closed facilities with a X-ray or high energy generator ,or other rays generators.

<Measurement of Density of Radio Active Materials in the Drainage>

The drainage produced at the open facilities to treat radioactive isotopes must be measured with its density of the radioactive isotopes and the contaminated level must be assured lower than the allowance set by the regulation, before it is released to a public water source.



γ Ray Spectrum
Measuring Apparatus



GM Measuring Apparatus
/Scintillation Measuring
Apparatus



Liquid Scintillation
Measuring Apparatus

Maintenance

Exchange of Ventilation Filter

The old and contaminated RI filter installed inside the box must be removed and a new filter must be placed. In the exchange process, the contamination might remain within the RI filter box, but should not diffuse to the front and lateral sides of the box by cleaning the circumferences, and the staffs involved in the exchange process of the filter must wear the complete protection suit during the entire process. The removed old filter must be carefully packed and secured in a storage room for the disposed materials.



Contamination Measurement in the RI Facilities in General, Cleaning, and Repairs

At the cleaning, collection or closing of RI facilities, the measurement of the contamination level, cleaning, or some repair works are required.



Cleaning of RI Drainage Tank

The RI drainage tank must be cleaned and inspected thoroughly and carefully, and the slurry must be removed. If necessary, repair works must be accomplished as well. The drainage must be performed, after the radio active contamination level is checked and assured it is lower than the acceptable level set by the regulation.

