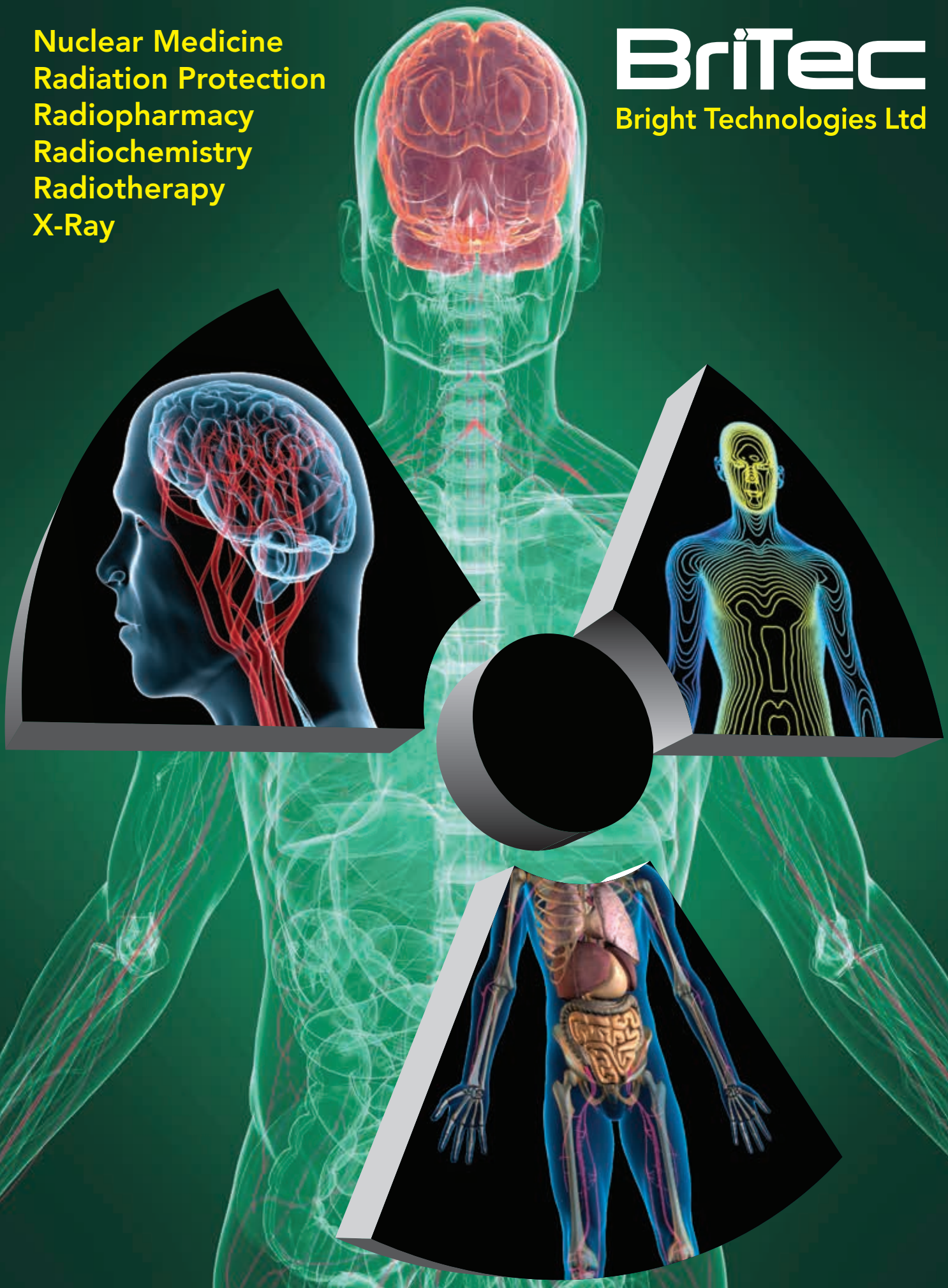
Nuclear Medicine
Radiation Protection
Radiopharmacy
Radiochemistry
Radiotherapy
X-Ray

BriTec
Bright Technologies Ltd



Product Guide 12

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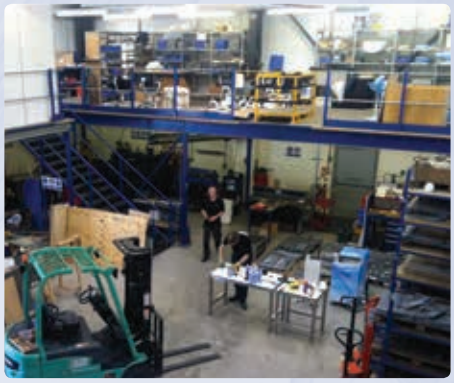
Bright Technologies are a leading supplier of Radiation Protection and Detection Equipment to the Medical and Nuclear industry.

# BriTec
## Bright Technologies Ltd



## ORDERING REQUIREMENTS

Orders may be placed by mail, email or telefax.
Each order must contain the following information:

1. Delivery name and address
2. Invoice name and address
3. Official purchase order number
4. Catalogue code and product description
5. Quantity required
6. VAT EXEMPTION, IF APPLICABLE

If a written order is sent to confirm an order previously placed by telephone or telefax, this must be clearly stated on the confirmation. No liability can be accepted for duplicated orders.

### DELIVERY

The majority of low cost items are normally available from stock, with delivery via courier/road transport depending on size and weight. Larger more expensive items are normally produced to order and delivery times will be quoted on placement of the order.

A COURIER DELIVERY SERVICE IS USED FOR ALL SHIPMENTS.

### PRICES AND DISCOUNTS

A handling and delivery charge will be made for each consignment, depending on weight but with a minimum charge of £10·00.

Prices quoted are exclusive of VAT which will be charged at the rate prevailing at the time of delivery unless a valid VAT exemption certificate is received before supply. Retrospective claims for VAT relief will incur an additional administration charge of £15·00.

Every effort will made to give reasonable notice of price changes but we reserve the right to change prices without prior notice.

**THERE IS A MINIMUM ORDER VALUE OF £50·00 NET EXCLUDING VAT AND DELIVERY.**

### SPECIAL QUOTATIONS

Please ask for special quotations on large quantity orders. Discounted prices can also be obtained on standing orders and contracts, where appropriate.

### PAYMENT

Payment terms are STRICTLY NET 30 DAYS from date of invoice. The company reserves the right to charge interest on overdue accounts.

### CONDITIONS OF SALE

All goods and services are supplied subject to our standard terms and conditions, a copy of which can be obtained on request.

Specifications and prices are subject to change without notice.

E&OE.

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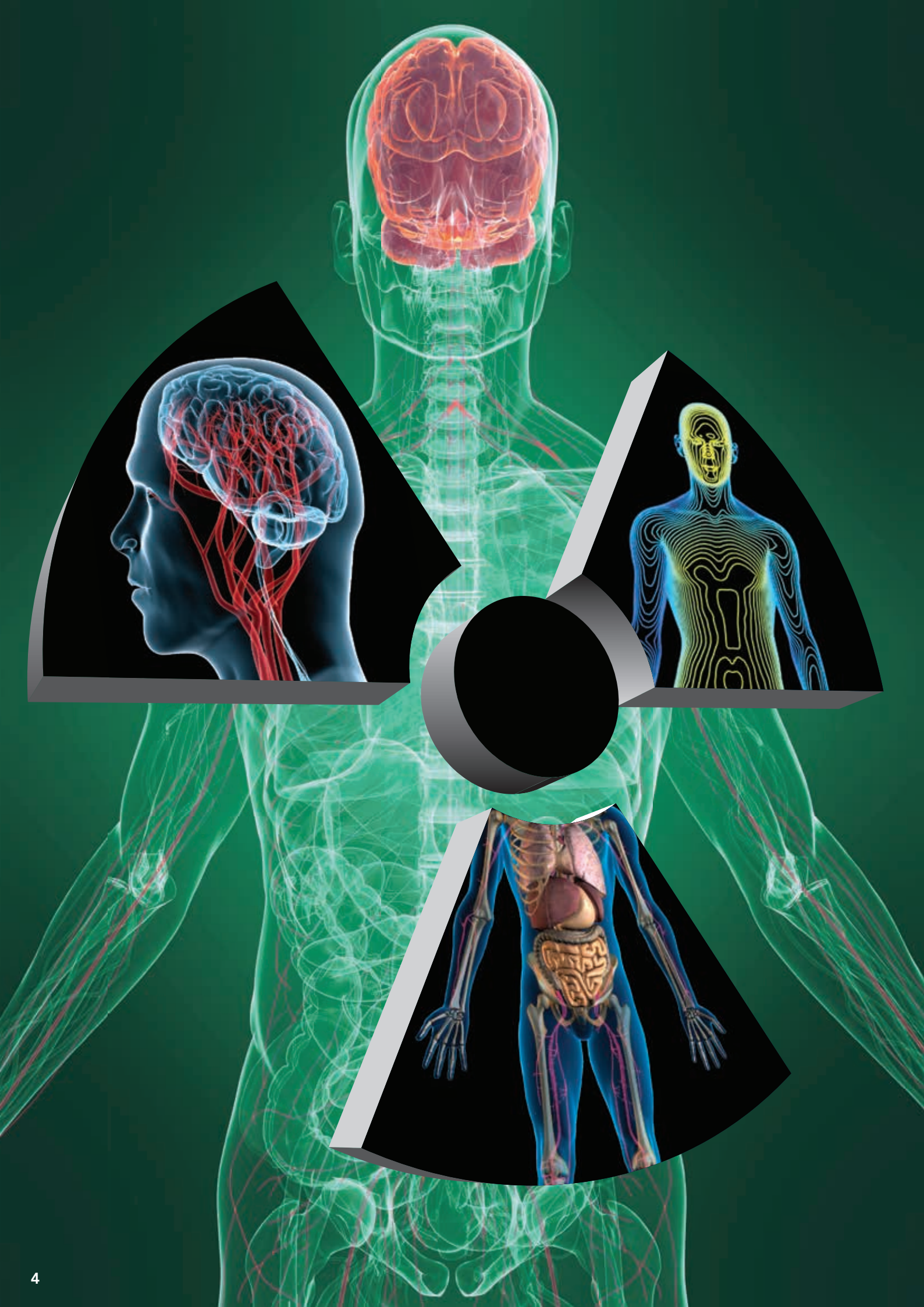


**Bright Technologies Ltd. manufacture and supply a wide choice of shields constructed in a variety of high density materials with different designs and locking mechanisms to meet most requirements.**

**Please specify syringe manufacturer when ordering since significant differences occur in designs and dimensions between manufacturers.**

## NEW UNI-LOCK® V TUNGSTEN SYRINGE SHIELDS

### THE NEW UNILOCK V SYRINGE SHIELD REPLACES THE UNILOCK I SYRINGE SHIELD.

This design development is in response to customers requesting syringe shields that offer greater glass protection and an anti-roll design. Radiopharmacist's are also requesting colour coded syringe shields.

It uses the same design and locking mechanism as the Unilock I.*

Shielding properties and internal sizes remain the same as the Unilock I.*

Although yellow is the standard colour, red and blue available as an optional extra.

Other colours are available for customers ordering 5 or more syringe shields in any one size.

Please refer to the table Below for details and product codes you will require when ordering.

| Code | Average Weight (g) | Length (mm) | Int Ø Tungsten Barrel (mm) | Tungsten Thickness (mm) |
|---|---|---|---|---|
| 1BT-UV01A | 120 | 72 | 8.8 | 1.8 |
| 1BT-UV01B | 140 | 77 | 8.8 | 1.8 |
| 1BT-UV01L | 165 | 75 | 11.5 | 2.25 |
| 1BT-UV02A | 140 | 53 | 11.5 | 2.25 |
| 1BT-UV02B | 145 | 59 | 11.5 | 2.25 |
| 1BT-UV03A | 150 | 65 | 11.5 | 2.25 |
| 1BT-UV03B | 160 | 68 | 11.5 | 2.25 |
| 1BT-UV05A | 190 | 60 | 15.4 | 2.3 |
| 1BT-UV05B | 195 | 65 | 15.4 | 2.3 |
| 1BT-UV05C | 200 | 68 | 15.4 | 2.3 |
| 1BT-UV10A | 250 | 75 | 18.2 | 2.15 |
| 1BT-UV10B | 260 | 85 | 18.2 | 2.15 |
| 1BT-UV20 | 285 | 95 | 23 | 2 |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | | |

Note: If the make of syringe is not specified on an order, the longest length of that particular size will be supplied for radiation safety reasons.
*Customers with existing Unilock I's can have them converted to the Unilock V's

UNI-LOCK® is a registered trademark of Bio-Nuclear Services Ltd.

## UNI-LOCK® IV TUNGSTEN SYRINGE SHIELDS

**NEW** Tungsten Syringe Shield with the same popular locking mechanism as the Unilock® I but with the whole of the tungsten barrel being made from tungsten, this gives increased shielding. There is also the added advantage of a wider lead glass window for increased viewing of the syringe graduations. The Unilock IV has a flat base to prevent rolling whilst in use.

### Specifications

Tungsten barrel: 2mm wall thickness
Lead glass window: 6-8mm thick, 2mm Pb equivalent
The shield is available to suit all size and make of syringes (see dimensions below)

| Code | Description | Length (mm) | Ext (mm) | Int Ø (mm) |
|---|---|---|---|---|
| 1BT-U401A | To fit 1ml syringes | 72 | 18x26 | 9 |
| 1BT-U401B | To fit 1ml syringes | 77 | 18x23 | 9 |
| 1BT-U401L | To fit 1ml Luerlock syringe | 75 | 18x23 | 13 |
| 1BT-U402A | To fit 2ml syringes | 53 | 18x26 | 13 |
| 1BT-U402B | To fit 2ml syringes | 59 | 18x26 | 13 |
| 1BT-U403A | To fit 3ml syringes | 65 | 18x26 | 13 |
| 1BT-U403B | To fit 3ml syringes | 68 | 18x26 | 13 |
| 1BT-U405A | To fit 5ml syringes | 60 | 21x27 | 16 |
| 1BT-U405B | To fit 5ml syringes | 65 | 21x27 | 16 |
| 1BT-U410A | To fit 10ml syringes | 75 | 22x30 | 17 |
| 1BT-U410B | To fit 10ml syringes | 85 | 22x30 | 17 |

UNI-LOCK® is a registered trademark of Bio-Nuclear Services Ltd.

## UNI-LOCK® LEAD GLASS SYRINGE SHIELDS

New high density (6.2) lead glass barrel fitted with the UNI-LOCK® design locking mechanism.

- The lead glass barrel gives a clear view of the syringe graduations over the entire length
- The barrel is bevelled for manoeuvrability during patient injection
- Available in 1ml, 3ml, 5ml and 10ml sizes
- Complete 360 degree visibility
- Provides the best combination of shielding with ease of use.

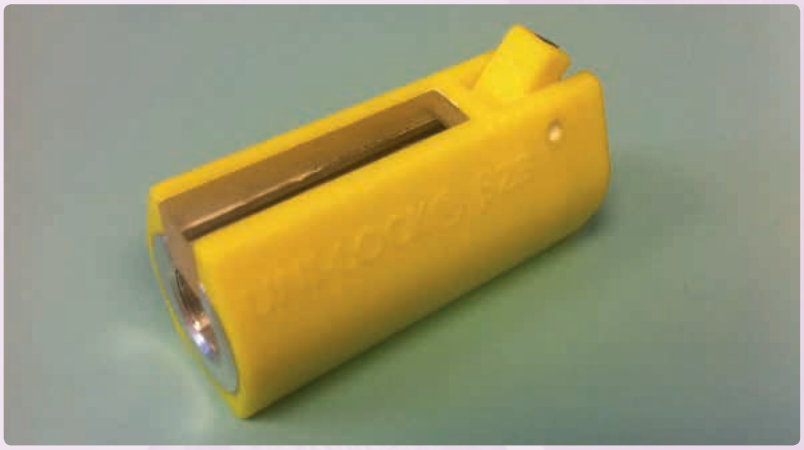
| Code | Size | Length |
|---|---|---|
| 1007-670 | To fit 1ml syringes | 77mm |
| 1007-675 | To fit 3ml/3cc syringes | 76mm |
| 1007-680 | To fit 5ml syringes | 70mm |
| 1007-685 | To fit 10ml syringes | 85mm |

## LEAD SCREW-LOCK SYRINGE SHIELDS

Low cost shields providing excellent protection. The moulded lead body has a steel insert for the tension screw. Fitted with a wide, high density lead glass window which is set into the shield to prevent accidental damage. Very clear view of the syringe graduations. Minimum lead thickness of 2mm. Finished in a hard white acrylic, inside and out.

| Code | Size |
|---|---|
| 1L01 | To fit 1ml syringes |
| 1L02 | To fit 2ml syringes |
| 1L03 | To fit 3ml syringes |
| 1L05 | To fit 5ml syringes |
| 1L10 | To fit 10ml syringes |
| 1L20 | To fit 20ml syringes |

## UNI-LOCK® BETA SYRINGE SHIELD



| Code | Length (mm) | Int Ø (mm) |
|---|---|---|
| 1BT-UB01A | 72 | 8.8 |
| 1BT-UB01B | 77 | 8.8 |
| 1BT-UB01L | 75 | 11.5 |
| 1BT-UB02A | 53 | 11.5 |
| 1BT-UB02B | 59 | 11.5 |
| 1BT-UB03A | 65 | 11.5 |
| 1BT-UB03B | 68 | 11.5 |
| 1BT-UB05A | 60 | 15.4 |
| 1BT-UB05B | 65 | 15.4 |
| 1BT-UB05C | 68 | 15.4 |
| 1BT-UB10A | 75 | 18.2 |
| 1BT-UB10B | 85 | 18.2 |
| 1BT-UB20 | 95 | 23 |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | |

New UniBeta Syinge Shields use the same locking mechanism used in our unilock range.

The plastic casing stops the syinge shield from rolling around with our anti-roll feature and helps protect the perspex window.

### Material Specifications

Aluminium Barrel Wall thickness : 5mm wall thickness
Perspex Window : 10mm thickness

UNI-LOCK® is a registered trademark of Bio-Nuclear Services Ltd.

## PLASTIC SHIELDS FOR BETA EMITTERS

Light weight acrylate shield with 360° unobstructed view of syringe and contents. Shield wall 20mm thick for maximum beta absorption. Available in 1ml, 2ml, 3ml, 5ml, 10ml, 20ml & 50ml sizes.

| Code | Size |
|---|---|
| 1BT-BS01 | 1ml Beta syringe shield |
| 1BT-BS01L | 1ml Luer Lok Beta syringe shield |
| 1BT-BS02 | 2ml Beta syringe shield |
| 1BT-BS03 | 3ml Beta syringe shield |
| 1BT-BS05 | 5ml Beta syringe shield |
| 1BT-BS10 | 10ml Beta syringe shield |
| 1BT-BS20 | 20ml Beta syringe shield |
| 1BT-BS50 | 50ml Beta syringe shield |

## PRO-TEC® BETA SHIELD

Designed for administering Yttrium-90, Strontium-89, Phosphorous-32 and other beta emitting radiopharmaceuticals. The lightweight shield is manufactured in acrylic with a thin layer of lead encapsulated in the acrylic. This construction attenuates both beta emissions and Bremstrahlung. The barrel is bevelled for manoeuvrability. Size is 80mm long by 38mm o.d. and 19mm i.d. Weight is 118g. Screw locking mechanism.

| Code | Size |
|---|---|
| 1007-956 | 1ml Pro-Tec® Beta syringe shield |
| 1007-957 | 10ml Pro-Tec® Beta syringe shield |

# SYRINGE SHIELDS/ACCESSORIES

## 511KeV TUNGSTEN SYRINGE SHIELDS

In our new design, we have integrated an anti-roll feature. It uses a screwlock mechanism to hold the syringe in place when in use.

### Material Specifications

Barrel: Tungsten 90% plus Ni & Cu balanced
Window: lead glass 11-13mm (4mm LE)
Screw: M4x16 socket cap

| Code | Description | Wall thickness | Weight (g) | Length (mm) | ID (mm) | OD (mm) |
|---|---|---|---|---|---|---|
| 1BT-511501 | FOR 1ml | 7.5mm | 500 | 72 | 8.5 | 24 |
| 1BT-511S01L | FOR 1ml Luer Lok | 7.5mm | 500 | 75 | 12 | 26 |
| 1BT-511S02/3 | FOR 2ml & 3ml | 7.5mm | 400 | 53 | 12 | 26 |
| 1BT-511S05 | FOR 5ml | 7.5mm | 600 | 60 | 16 | 31 |
| 1BT-511S10 | FOR 10ml | 7.5mm | 700 | 75 | 18 | 33 |

## TUNGSTEN SCREW-LOCK SYRINGE SHIELDS

Screw lock design using the same tungsten barrel as the Uni-Lock® IV tungsten syringe shield.

| Code | Size |
|---|---|
| 1BT-SL01 | To fit 1ml syringes |
| 1BT-SL01L | To fit 1ml Luer Lok syringe |
| 1BT-SL02 | To fit 2ml syringes |
| 1BT-SL03 | To fit 3ml syringes |
| 1BT-SL05 | To fit 5ml syringes |
| 1BT-SL10 | To fit 10ml syringes |

## SYRINGE SHIELD REPAIRS AND REPLACEMENT GLASS

Bright Technologies will undertake to repair or replace broken glass in syringe shields of most types of syringe shields in our workshops.

| Code | Size |
|---|---|
| 1BT-SSG | Supply only, lead glass window for syringe shields |
| 1BT-SSR | Supply and fit lead glass window for syringe shields |

## SYRINGE SHIELD HOLDER

Supports up to eight syringe shields of any type. The syringe shields rest in troughs which are lined with a latex covering to prevent scratching.

| Code | Description |
|---|---|
| 1007-999 | Syringe Shield Holder |

## BENCH TOP SYRINGE HOLDER

This Shielded Syringe Holder will accommodate unshielded syringes.

The Syringe Holder is constructed of lead shielding, encased in steel. The shielding tapers from .25" – .5" lead. The large diameter base ensures stability.

Weight: 6lb (2.7kg)

| Code | Description |
|---|---|
| 1009-205 | Lead Shielded Syringe Holder |

## NEEDLE RECAPPER

Health and Safety (Sharps Instruments in Healthcare) Regulations 2013

These Regulations implement the EU Council Directive 2010/32/EU on the prevention of sharps injuries in the hospital and healthcare sector. Many of the requirements contained in the Directive already formed part of health and safety law in Great Britain. The new regulations only contain those requirements that are not specifically addressed in existing legislation.

HSE has produced a Health Services Information sheet Health and Safety (Sharp Instruments in Healthcare) Regulations 2013[1] to assist employers and employees to understand their legal obligations under the Regulations.

The Directive

The Directive is published in the Official Journal of the European Union [2]. Member states, including the UK, have until 11th May 2013 to ensure that the provisions of the Directive have been implemented into national legislation.

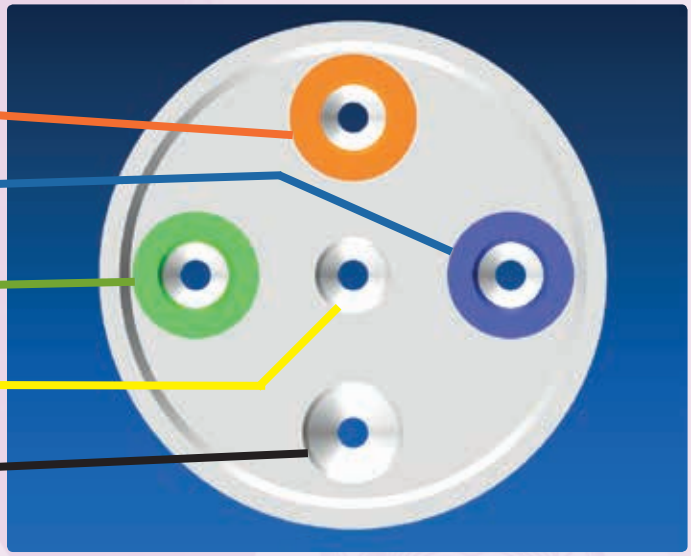
# NEEDLE RECAPPER

## PRODUCT INFORMATION

The main body of the needle recapper is made from natural white acetal copolymer resin.

Both the top and the bottom of the needle recapper are recessed. The outside wall of the needle recapper has a non-slip textured finish to help you grip the recapper during cleaning, etc.

The Needle Recapper has 5 different holes. Please look at the description below to see which hole is most suitable for the needle you are using.



Orange Hole
Insulin type syringes

Blue Hole
Blue needles

Green Hole
Green needles

Centre Hole
Spinal (yellow) type needles

Large Hole
Miscellaneous large diameter needles

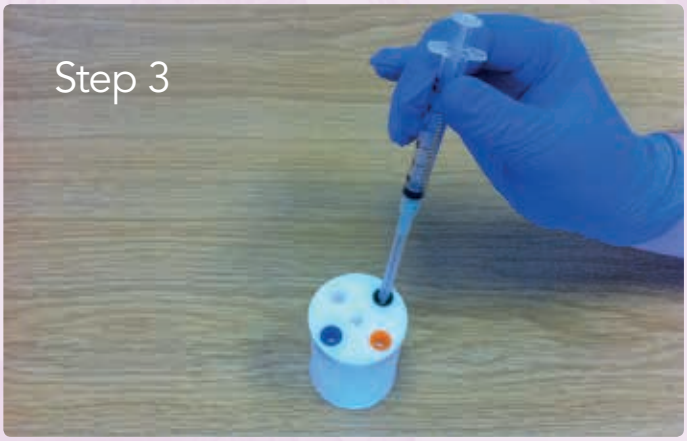
## HOW TO USE THE PRODUCT

Follow this guide on how to use the product safely;

Step 1
Place the Needle Recapper on a flat surface and place the cap in the correct hole for the syringe you are using.

Step 2
Using a single hand, place the needle into the cap inside the Needle Recapper and push firmly.

Step 3
Remove the syringe from the Needle Recapper and the needle should now be recapped.



## CLEANING/DISINFECTING/STERILISING YOUR NEEDLE RECAPPER

Acetal copolymer resin allows machined products the ability to retain dimensional integrity, maintain stability in water and most chemicals at elevated temperatures.

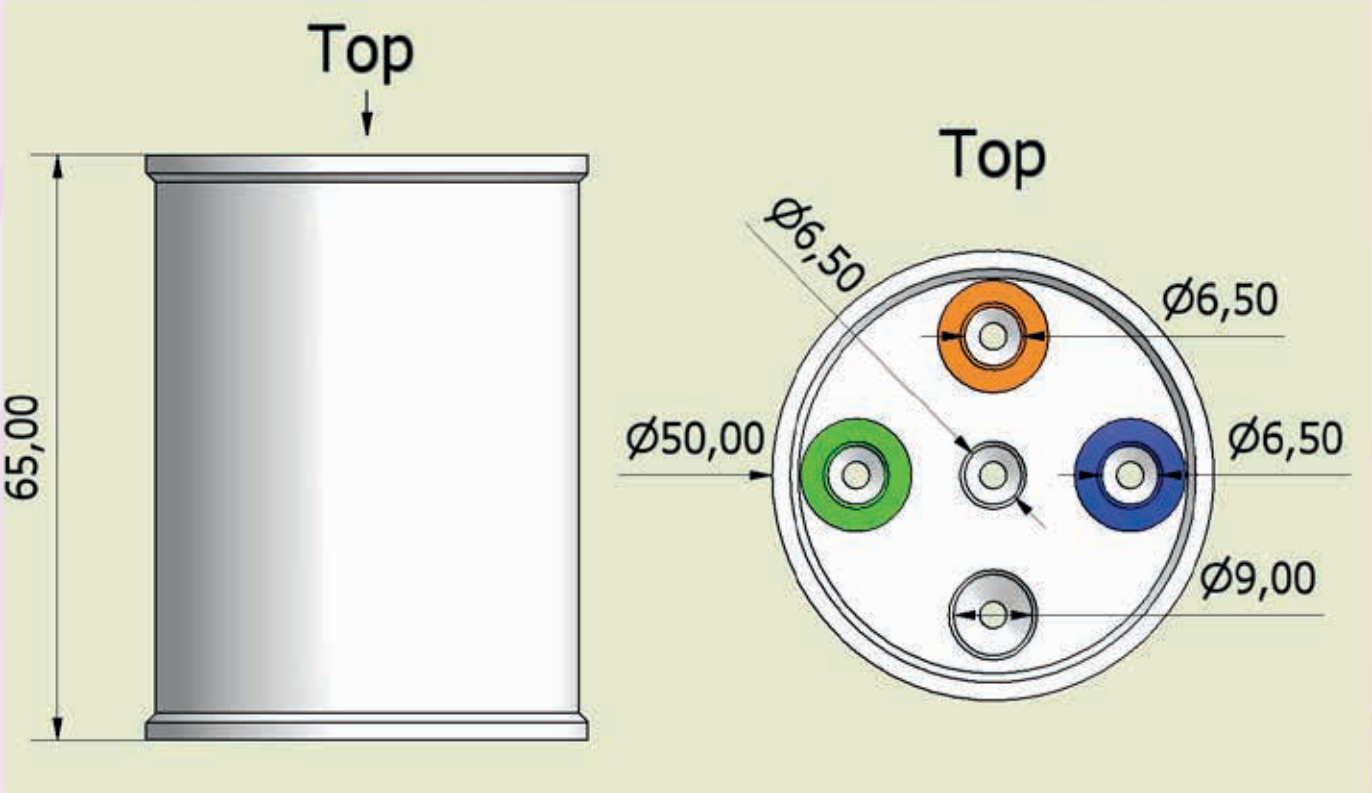
Recommended sterilization techniques for acetal include steam autoclaving (Maximum 121Celcius cycle) and Ethylene Oxide gas.

Disinfectants and germicides generally have no effect on acetal, however, acidic solutions can degrade the polymer over the long term.

Warnings:

Acetal is degraded by high concentrations of Hydrogen peroxide and/or Ozone – It is therefore not suitable to be sterilised using the newer type of Hydrogen peroxide 'Vapour Phase/Plasma' sterilisers. Mild acidic solutions, over the long term, can have a detrimental effect on acetal. Strong acid solutions, e.g.>1m HCl, may have an immediate detrimental effect.

## PRODUCT DIMENSIONS




| Code | Description |
|---|---|
| 1BT-NDLRECAP | Needle Recapper |

## THE PRO-TEC® UNIT DOSE PIG

Safety and efficiency – from the pharmacy to the patient... and back!

The Pro-Tec® Unit Dose Pig accommodates the most commonly used conventional and safety-engineered syringes. The lead components are fully encapsulated in durable polycarbonate, making this unit rugged and easy to clean. A single twist to open or close reduces loading/unloading time. The overlap design eliminates streaming regardless of the dose's position inside the pig.

A replaceable O-ring protects against leakage. Complete encapsulation of lead components in high-impact polycarbonate protects the lead shielding from physical damage during handling. The durable plastic will not be damaged by automatic washing systems. Smooth plastic surfaces make the application and removal of adhesive labels easy. This product is designed to comply with IATA and DOT II requirements when transported in an appropriate shipping container.

Innovative and cost effective, the Pro-Tec® Unit Dose Pig will help improve the safety and efficiency of radiopharmaceutical handling procedures.

Pro-Tec® shielding for safety syringes will help pharmacies and clinics adhere to ALARA principles and improve compliance with OSHA directives – without compromising efficiency.

- Attractive design
- Overlapped lead eliminates streaming
- High-impact polycarbonate encapsulates lead components
- Opens and closes with a single twist
- 0.25" lead shielding
- O-ring seal
- Fits into ammo cans (vertically and horizontally)
- Compatible with automatic washing equipment
- Accommodates the following syringes:
  - 3cc BD
  - 3cc BD Safety-Lok
  - 3cc Monoject
  - 3cc Monoject Safety
  - 5cc BD
  - 6cc Monoject
  - 10cc BD

Dimensions: 8.5" h x 1.94" Ø (220x4.09mm)

Lead Shielding: 0.25" nominal thickness (6.4mm)

Construction: Lead, fully encapsulated with polycarbonate on the outside and polypropylene on the inside.

Colour: Red, White, Blue

Weight: 3lb (1.4kg)

| Code | Description |
|---|---|
| 1001-280 | Unit Dose Pig, Pro-Tec®, Red |
| 1001-281 | Unit Dose Pig, Pro-Tec®, White |
| 1001-282 | Unit Dose Pig, Pro-Tec®, Blue |

## PRO-TEC® PIG RACK

Designed for countertop use, the Pro-Tec® Pig rack holds up to ten Pro-Tec® Pigs safely and conveniently. The bottom of the rack has hexagonal cut outs that match the bottom of a Pro-Tec® Pig to ensure each pig is held securely. When inserted into the rack, the pig can be easily opened or closed with a single twist.

Dimensions: 12x1.75x6" WxHxD (305x44x152mm)

| Code | Description |
|---|---|
| 1001-283 | Pig Rack, Pro-Tec® |

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## UNIT DOSE PIG WALL RACK

Improve lab safety, efficiency and organization with the new Unit Dose Pig Wall Rack.

The wall rack improves work space with its pigeonhole design and reduces unnecessary handling. Unit doses can be identified at a glance. The rack's sturdy construction will hold up to 25 unit dose pigs.

Dimensions: 17x18" WxH (432x457mm)

| Code | Description |
|---|---|
| 1008-400 | Wall Rack, Unit Dose Pig |

## 001-789 UNIT DOSE ZEVALIN® PIG

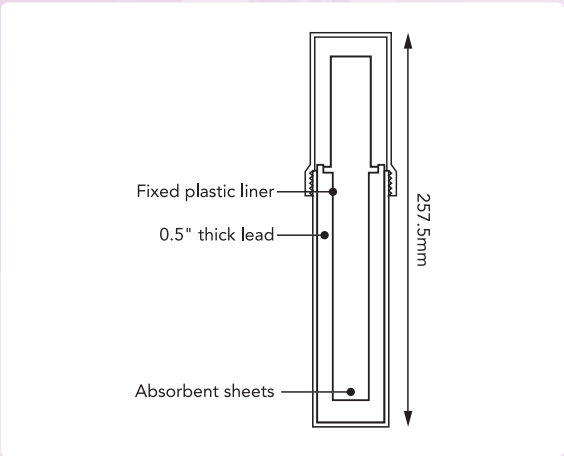
The 1001-789 Unit Dose Pig is designed to reduce exposure from gamma emitting radiopharmaceuticals, such as the In-111 component of a Zevalin® treatment. The barrel of the pig is constructed of .5" thick (1.3cm) lead encased in durable plastic. The pig accommodates a 10cc B-D syringe filled to capacity. The pig fits into Zevalin® shipping container

Dimensions: 10.3" l x 2.3" dia. (26 x 5.8cm)

Lead Shielding: .5" thick (1.3cm)

Weight: 8.2lb (3.7kg)

Accommodates 10cc syringe with or without needle, filled to 10cc




| Code | Description |
|---|---|
| 1001-789 | Pig, Unit Dose, Zevalin® In-111 |
| 1001-771 | Sheets, Absorbent, 100/pkg |

## 001-788 UNIT DOSE Y-90 PIG

The 1001-788 Unit Dose Pig is designed to reduce exposure from Beta emitting radiopharmaceuticals, such as the Y-90 component of a Zevalin™ treatment. The barrel of the pig is constructed of .09" thick (2.3mm) lead and .36" (9.1mm) acrylic that attenuates beta emissions and errant Bremsstrahlung. The lead and acrylic is encased in a durable plastic. The pig accommodates a 10cc B-D syringe filled to 9cc. The pig fits into the Zevalin shipping container.

Dimensions: 10.3" l x 2.3" dia. (26x5.8cm)

Lead Shielding: .09" thick (2.3mm)

Acrylic Shielding: .36" thick (9.1mm)

Weight: 3lb (1.4kg)

Pig, Unit Dose, Zevalin Y-90

Accommodates 10cc syringe with or without needle, filled to 9cc.

| Code | Description |
|---|---|
| 1001-788 | Unit Dose Y-90 Pig |
| 1001-771 | Sheets, Absorbent, 100/pkg |

## PET ZEVALIN AND BEXXAR PIG RACK

Accommodates PET, Zevalin and BEXXAR pigs

Designed for countertop use, the PET Pig Rack holds up to eight PET pigs safely and conveniently.

The bottom of the rack has hexagonal cutouts that match the bottom of a pig to ensure each pig is held securely. When inserted into the rack, the pig can be easily opened or closed with a single twist.

Dimensions: 12x1.75x6" WxHxD (305x44x152mm)

Weight: 2.8lb (1.3kg)

Related:

1001-785 Pig, Unit Dose, PET, 3/5cc, .5" lead

1001-788 Pig, Unit Dose, Zevalin Y-90

1001-789 Pig, Unit Dose, Zevalin In-111

1001-860 Pig, Unit Dose, BEXXAR

| Code | Description |
|---|---|
| 1001-284 | PET Zevalin and BEXXAR Pig Rack |

## PRO-TEC® PIG TRANSPORT BAG

The durable, nylon, waterproof shipping bag is designed to accommodate up to 11 Pro-Tec® Pigs containing syringes. It is the connecting piece in the Biodex solution, ensuring safe, convenient handling of syringes from the pharmacy and back again. The system meets DOT 7A Type A packaging requirements.

Dimensions: 10.5x5.75x11.5" HxWxD (267x16x292mm)

Material:

– Exterior: Nylon

– Interior: Polyester

| Code | Description |
|---|---|
| 1001-754 | Shipping Bag, Pro-Tec® Pig |

## COMPACT PET SHIPPING SYSTEM – SINGLE

For Shipping Syringes With or Without Needles Attached. This Compact PET Shipping System transports one 3cc or 5cc syringe containing high-energy radionuclides such as FDG F-18. Syringes fit into the pig with or without an attached needle. Designed to conserve space and minimize weight, the fully loaded shipping container weighs less than 40lb. An important feature is that the shipping container can be left at a convenient height while the pig (9 pounds) can be easily removed from the container. The pig is then placed behind an L-Block for dose loading and unloading. All Biodex PET L-Block Shields incorporate a hex-shaped plate that corresponds with the hex shape at the base of the pig. This design element allows one-handed loading and unloading of syringes.

The 1001-785 Unit Dose Pig is encapsulated in high-impact polycarbonate and polypropylene, making the pig durable, easy to clean and compatible with automatic washing systems. A single twist opens or closes the pig, reducing handling time.

The system meets DOT II Type A packaging requirements when shipping up to 500 mCi (18.5 GBq) of FDG F-18.

### Compact PET Shipping System for One Unit Dose Pig consists of:

PET Unit Dose Pig

Absorbent Sheets

Shipping Container with lead shielding

### The PET Unit Dose Pig is encapsulated in high-impact polycarbonate and polypropylene:

Single twist thread to open and close

No exposed lead

Compatible with automatic washing equipment

### 1001-785 Unit Dose Pig

Dimensions: 10.2" h x 2.4" dia (26x6cm)

Lead Shielding:

– Body: .5" thick (1.3cm)

– Ends: 1.2" thick, bottom; 1.44" thick, top (3cm and 3.6cm)

Weight: 8.7lb (4kg)

### 1001-786 PET Shipping System, Single

Dimensions:

– Container: 11.75" l x 11.75" w x 12.5" h (29.8x29.8x31.8cm)

– Cubic Feet: ~1 cu ft (.03 cu meters)

Weight (Combined): 38.3lb (17.5kg)

### Regulations:

Meets DOT II Type A packaging requirements when shipping up to 500 mCi (18.5 GBq) of FDG F-18.

Meets IATA Dangerous Goods Regulations, 51st Edition Sections 5.0.4.3, 10.5, and 10.6.1 thru 10.6.3.5.

### 1001-786 PET Shipping System, Single

For single Unit Dose Pig. Includes 1001-785 Unit Dose Pig, absorbent sheets and Shipping Container with lead shielding.

Note: PET Unit Dose Pigs are sold in lots of three.

### Component:

Pig, Unit Dose, PET, 3/5cc, .5" lead

Accommodates syringes with or without needle.

| Code | Description |
|---|---|
| 1001-786 | Shipping System, PET, Single |
| 1001-785 | Pig, Unit Dose, PET, 3/5cc, .5" lead (3) |
| 1001-284 | Pig Rack, PET |
| 1001-730 | Cart, Transport, PET Shipping System |
| 1001-771 | Sheets, Absorbent, 100/pkg |
| 1001-726 | Tags, Wire Security, 25/pkg |
| 1001-721 | Document Protector, 100/pkg |

## COMPACT PET SHIPPING SYSTEM – DOUBLE

For Shipping Syringes With or Without Needles Attached.
This Compact PET Shipping System transports two 3cc or 5cc syringes containing high-energy radionuclides such as FDG F-18. Syringes fit into the pigs with or without an attached needle. Designed to conserve space and minimize weight, the fully loaded shipping container weighs only 55lb. An important feature is that the shipping container can be left at a convenient height while the pig (9 pounds) can be easily removed from the container. The pig is then placed behind an L-Block for dose loading and unloading. All Biodex PET L-Block Shields incorporate a hex-shaped plate that corresponds with the hex shape at the base of the pig. This design element allows one-handed loading and unloading of syringes.

The 1001-785 Unit Dose Pig is encapsulated in high-impact polycarbonate and polypropylene, making the pig durable, easy to clean and compatible with automatic washing systems. A single twist opens or closes the pig, reducing handling time.

The system meets DOT II Type A packaging requirements when shipping up to 160 mCi (5.92 GBq) in one pig and 235 mCi (8.70 GBq) in the other, totalling 395 mCi (14.62 GBq) of FDG F-18.

### Compact PET Shipping System for Two Unit Dose Pigs consists of:

PET Unit Dose Pigs (two)

Absorbent Sheets

Shipping Container with lead shielding

### The PET Unit Dose Pig is encapsulated in high-impact polycarbonate and polypropylene:

Single twist thread to open and close

No exposed lead

Compatible with automatic washing equipment

### 1001-785 Unit Dose Pig

Dimensions: 10.2" h x 2.4" dia (26x6cm)

Lead Shielding:

– Body: .5" thick (1.3cm)

– Ends: 1.2" thick, bottom; 1.44" thick, top (3cm and 3.6cm)

Weight: 8.7lb (4kg)

### 1001-787 PET Shipping System, Double

Dimensions:

– Container: 11.75" l x 11.75" w x 12.5" h (29.8x29.8x31.8cm)

– Cubic Feet: ~1 cu ft (.03 cu meters)

Weight (Combined): 55.2lb (25.2kg)

### Regulations:

Meets DOT II Type A packaging requirements when shipping up to 160 (5.92 GBq) and 235 mCi (8.70 GBq) of FDG F-18

Meets IATA Dangerous Goods Regulations, 51st Edition Sections 5.0.4.3, 10.5, and 10.6.1 thru 10.6.3.5.

### 1001-787 Shipping System, PET, Double

For two single Unit Dose Pigs

Includes: Two 1001-785 Unit Dose Pigs, absorbent sheets and shipping container with lead shielding

### Component:

1001-785 Pig, Unit Dose, PET, 3/5cc, .5" lead

Accommodates syringes with or without needle.
Note: PET Unit Dose Pigs are sold in lots of three.

| Code | Description |
|---|---|
| 1001-787 | Shipping System, PET, Double |
| 1001-785 | Pig, Unit Dose, PET, 3/5cc, .5" lead (3) |
| 1001-284 | Pig Rack, PET |
| 1001-730 | Cart, Transport, PET Shipping System |
| 1001-771 | Sheets, Absorbent, 100/pkg |
| 1001-726 | Tags, Wire Security, 25/pkg |
| 1001-721 | Document Protector, 100/pkg |

## COMPACT PET SHIPPING SYSTEM – TRIPLE

This Compact PET Shipping System transports three 3cc or 5cc syringes containing high-energy radionuclides such as FDG F-18. Syringes fit into the pigs with or without an attached needle. Designed to conserve space and minimize weight, the fully loaded shipping container weighs only 95lb. An important feature is that the shipping container can be left at a convenient height while the pig (9 pounds) can be easily removed from the container. The pig is then placed behind an L-Block for dose loading and unloading. All Biodex PET L-Block Shields incorporate a hex-shaped plate that corresponds with the hex shape at the base of the pig. This design element allows one-handed loading and unloading of syringes.

The 1001-785 Unit Dose Pig is encapsulated in high-impact polycarbonate and polypropylene, making the pig durable, easy to clean and compatible with automatic washing systems. A single twist opens or closes the pig, reducing handling time.

The system meets DOT II Type A packaging requirements when shipping up to 235 mCi (8.70 GBq) in one pig, and 160 mCi (5.92 GBq) in the second pig and 140 mCi (5.18 GBq) in the third pig, totaling 535 mCi (19.80 GBq) of FDG F-18.

### Compact PET Shipping System for three Unit Dose Pigs consists of:

PET Unit Dose Pigs (three)

Absorbent Sheets

Shipping Container with lead shielding

### The PET Unit Dose Pig is encapsulated in high-impact polycarbonate and polypropylene:

Single twist thread to open and close

No exposed lead

Compatible with automatic washing equipment

### 1001-785 Unit Dose Pig

Dimensions: 10.2" h x 2.4" dia (26x6cm)

Lead Shielding:

– Body: .5" thick (1.3cm)

– Ends: 1.2" thick, bottom; 1.44" thick, top (3cm and 3.6cm)

Weight: 8.7lb (4kg)

### 1001-739 PET Shipping System, Triple

Dimensions:

– Container: 11.75" l x 11.75" w x 12.5" h (29.8x29.8x31.8cm)

– Cubic Feet: ~1 cu ft (.03 cu meters)

Weight (Combined): 95lb (43.1kg)

### Regulations:

Meets DOT II Type A packaging requirements when shipping up to 235 (8.70 GBq), 160 (5.92 GBq) and 140 mCi (5.18 GBq) of FDG F-18

Meets IATA Dangerous Goods Regulations, 51st Edition Sections 5.0.4.3, 10.5, and 10.6.1 thru 10.6.3.5.

### 1001-739 Shipping System, PET, Triple

For three single Unit Dose Pigs

Includes: Three 1001-785 Unit Dose Pigs, absorbent sheets and shipping container with lead shielding

### Component:

1001-785 Pig, Unit Dose, PET, 3/5cc, .5" lead Accommodates syringes with or without needle.

| Code | Description |
|---|---|
| 1001-739 | PET Shipping System, Triple |
| 1001-785 | Pig, Unit Dose, PET, 3/5cc, .5" lead (3) |
| 1001-284 | Pig Rack, PET |
| 1001-730 | Cart, Transport, PET Shipping System |
| 1001-771 | Sheets, Absorbent, 100/pkg |
| 1001-726 | Tags, Wire Security, 25/pkg |
| 1001-721 | Document Protector, 100/pkg |

## VIAL SHIPPING

The Compact PET Shipping System for Vial Pigs is designed to transport a 10ml or 30ml vial containing high-energy radionuclides. Designed to conserve space and minimize weight, the entire system weighs only 50lb. An important feature is that the shipping container can be placed at a convenient height while the pig is easily removed from the shipping case. For added safety and convenience, the vial pig can then be placed in the 042-466 Dose Drawing System for drawing doses from the vial.

The system meets DOT II Type A packaging requirements when shipping up to 2.5 Ci (92.5 GBq) of FDG F-18.

### PET Shipping System for Vial Pigs consists of:

PET Vial Pig

Absorbent Sheets

Shipping Container with lead shielding

### 1001-706 Vial Pig

Dimensions:

– Exterior: 6.63" h x 4.15" dia (16.8x10.5cm)

– Interior: 2.76" h x 1.51" dia (7x3.8cm)

Lead Shielding:

– Sides and Bottom: 1" thick (2.5cm)

– Top: 1.75" (4.4cm)

Weight: 21.3lb (9.7kg)

### 1001-724 PET Shipping System, Vial

Dimensions:

– Container: 11.75" l x 11.75" w x 12.5" h (29.8x29.8x31.8cm)

– Cubic Feet: ~1 cu ft (.03 cu meters)

Weight (Combined): 49.7lb (22.5kg)

### Regulations:

Meets DOT II Type A packaging requirements when shipping up to 2.5 Ci (92.5 GBq) of FDG F-18

Meets IATA Dangerous Goods Regulations, 51st Edition Sections 5.0.4.3, 10.5, and 10.6.1 thru 10.6.3.5.

1001-724 Shipping System, PET, Vial*

For 10 or 30ml vials.

Includes 1001-706 Vial Pig and shipping container with lead shielding.

### Component:

1001-706 Pig, Vial, PET, 10/30ml, 1" lead

For 30ml vials.

Includes 1001-707 Vial Pig Adapter, to accommodate 10ml vials, and Three Absorbent Sheets.*

Related:

1001-707 Adapter, Vial Pig, 10ml

Allows 1001-706 Vial Pig to accommodate 10ml vials.

Biodex has designed a NEW Vial Shipping System that employs a unique Tungsten Vial Shield for use with the Medrad® Intego™ PET Infusion System. Manufactured to Medrad's specifications, the Vial Shield transports a 30ml Hospira vial.

To lift or lower the vial within the container or the Intego™ Infusion System, a detachable handle is provided. Accommodation is made for the handle to travel with the shipping container.

The system meets DOT II Type A packaging requirements when shipping up to 2.5 Ci (92.5 GBq) of FDG F-18.

### 1001-708 Vial Shield with Lifting Handle

Weight: 15.2lb (6.89kg)

### 1001-723 Intego Shipping Container

Dimensions:

– Container: 11.75" l x 11.75" w x 12.5" h (29.8 x 29.8x31.8cm)

– Cubic Feet: ~1 cu ft (.03 cu meters)

Weight: 48.8lb (22.1kg)

Weight (Combined): 64lb (29kg)

### Regulations:

Meets DOT II Type A packaging requirements when shipping up to 2.5 Ci (92.5 GBq) of FDG F-18

Meets IATA Dangerous Goods Regulations, 51st Edition Sections 5.0.4.3, 10.5, and 10.6.1 thru 10.6.3.5.

1001-708

Shield, Vial, Tungsten, Intego™

For 30ml Hospira vials. Includes lifting handle.

1001-723 Shipping Container, Intego™

| Code | Description |
|---|---|
| 1001-724 | PET Shipping System, Vial |
| 1001-723 | Intego Shipping Container |
| 1001-706 | Vial Pig |
| 1001-707 | Adapter, Vial Pig, 10ml – Allows 1001-706 Vial Pig to accommodate 10ml vials. |
| 1001-708 | Shield, Vial, Tungsten, Intego™ – For 30ml Hospira vials. Includes lifting handle |
| 1001-730 | Cart, Transport, PET Shipping System |
| 1001-771 | Sheets, Absorbent, 100/pkg |
| 1001-726 | Tags, Wire Security, 25/pkg |
| 1001-721 | Document Protector, 100/pkg |

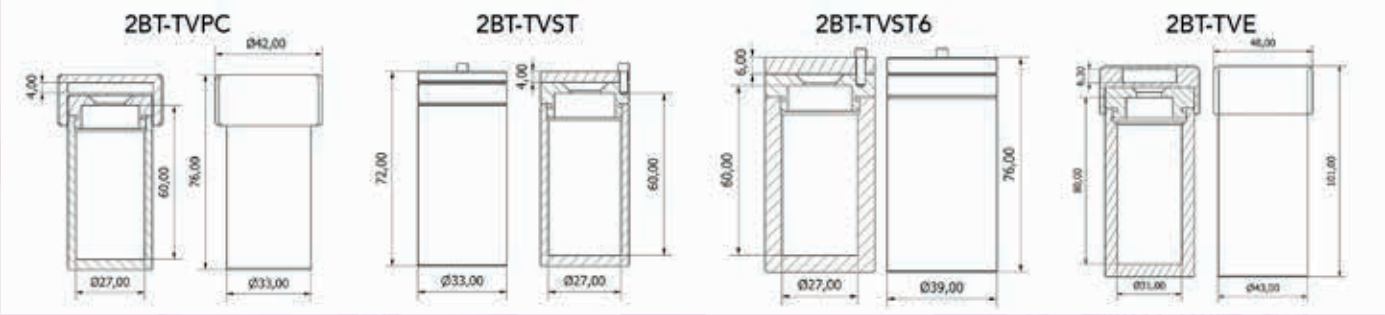
## TUNGSTEN VIAL SHIELDS

Lightweight unbreakable shield providing maximum protection. The smooth polished surface of the tungsten alloy is easy to keep clean or sterilise. Designed to accommodate reagent vials from most kit manufacturers. Removable screw top has a dished opening to expose vial septum. The vial top is held firmly against the septum opening by an internal spring.

| Code | Description | Cap Type | Wall Thickness |
|---|---|---|---|
| 2BT-TVPC | Tungsten Vial Shield | Plastic Cap (Lead Insert) | 3mm |
| 2BT-TVST | Tungsten Vial Shield | Tungsten Swivel Top | 3mm |
| 2BT-TVST6 | Tungsten Vial Shield | Tungsten Swivel Top | 6mm |
| 2BT-TVE | Elution Vial Shields | Plastic Cap (Lead Insert) | 6mm |

### Material Specifications:

Tungsten pot and lid: Tungsten 90% plus Ni and Cu Balanced
Spring: Compression – BS 1726 PT 1 (2002) Stainless Steel
Insert: Plastic
Cap: Plastic with lead disc (2BT.TVPC ONLY)




## UNI-LOCK® VIAL SHIELDS

New universal shield. Stainless steel exterior, white coated interior. Two large lead glass windows set at 180°. Removable screw base contains spring to hold vial against top orifice. Supplied with plastic cup to hold small diameter vials centrally against orifice. Push-on plastic cap with lead insert provides complete shielding and protects vial septum.

- Overall height: 90.0mm
- Overall diameter: 41.0mm
- Internal diameter: 27.5mm
- Weight: 700g
- Minimum Pb. shielding: 6mm
- Pb glass windows: 56mm long x 9.5mm wide x 5mm thick.

| Code | Description |
|---|---|
| 203 | UNI-LOCK® Vial Shield |

## DOUBLE WINDOWED VIAL SHIELDS

New universal tungsten vial shield with outer acrylic window protection. Two large lead glass windows set at 180°. Base contains spring to hold vial against top orifice. Supplied with plastic cup to hold small diameter vials centrally against orifice. Push-on plastic cap with lead insert provides complete shielding and protects vial septum.

| Code | Description |
|---|---|
| 2BT-TVSW3 | Double Windowed Vial Shield, 3mm Tungsten |
| 2BT-TVSW6 | Double Windowed Vial Shield, 6mm Tungsten |

UNI-LOCK® is a registered trademark of Bio-Nuclear Services Ltd.

## YTTRIUM-90 ZEVALIN REACTION VIAL SHIELD

Y-90 Zevalin mixing and dose drawing is performed using a 10ml reaction vial supplied by IDEC in the Zevalin kit. This shield is designed to fit that specific vial, and to attenuate beta and bremsstrahlung radiation associated with yttrium-90. The shield's top and bottom are threaded and knurled to allow quick insertion and removal of vials with minimal hand exposure. The top cover incorporates a septum access aperture with a pivoting shield to further reduce exposure.

Lead and aluminium construction attenuates beta and bremsstrahlung radiation

Inside height and diameter sized specifically for Y-90 reaction vial

Pivoting aperture cover for quick and convenient access to vial septum

Removable top and bottom to minimize exposure during vial transfer

Dimensions: 2.2Øx3.2" H (56x81mm)

Inside Dimensions: 1.06Øx 2" H (40x 51mm)

Shielding:

– Cylinder: 0.5" thick (13mm) lead and 0.06" thick (1.5mm) aluminium

– Bottom End Cap: 0.5" thick (13mm) lead and 0.06" thick (1.5mm) aluminium

– Top End Cap: 0.25" thick (6.4mm) lead

– Cover: 0.31" thick (7.9mm) lead, 0.06" thick (1.5mm) aluminium

Weight: 3.9lb (1.8kg)

| Code | Description |
|---|---|
| 2053-607 | Vial Shield, Y-90, Reaction, 10ml |

## VIAL STORAGE BOX MK2

Lead shield bench top box designed for the safe storage of radioactive vials and small sources.The Lid is Hinged and has a built in stop to hold the lid at 100 degrees when open. It also comes with a lockable butterfly catch and a chrome finished handle. Constructed from steel with a 6mm lead lining.

**Material Specifications:**

Finish: durable epoxy coated stove enamel

Lead: Code 7 or Code 5

BSEN12588

Internal Surface: Stainless Steel.

| Code | Description | Internal Dimensions | | |
|---|---|---|---|---|
| | | Length | Width | Depth |
| 3BT-VSB | Shielded Vial Storage Box | 240mm | 200mm | 120mm |
| OTHER SIZES AND LEAD THICKNESSES AVAILABLE ON REQUEST | | | | |

## LEAD VINYL SHEET

Can be cut and shaped for many protection applications. Sanitary, non-absorbing smooth surface on both sides. Long shelf life with virtually no ageing of material. Uniform density throughout with a lead equivalence of 1mm. The vinyl sheet is acid and alkali resistant and has good abrasion resistance. Supplied as a 1000x600mm sheet with a nominal thickness of 4mm and a weight of 10kg.

Other sizes available on request.

| Code | Description |
|---|---|
| 3LVS | Lead Vinyl Sheet |

## SYRINGE CARRIER BOX 3/6MM PB

As part of our continuing development programme Bright Technologies have improved designs and extended the range of their syringe carriers which are ideal for transporting loaded syringes and/or small radioactive sources.

All carriers are constructed from a steel stove enamelled box lined with lead. Lead sizes come in either 3mm or 6mm. The hinged lid is fitted with a front fixing catch which can be wired and sealed for security.

All carriers are supplied with a choice of fixed or pivoting handle. The pivoting handle is locked in the upright position when carried. All carriers are fitted with an internal, removable, rigid plastic tray. The internal length of the carriers is designed to accept a loaded 10ml syringe fitted with a 25mm capped needle. 100mm handle clearance from lid.

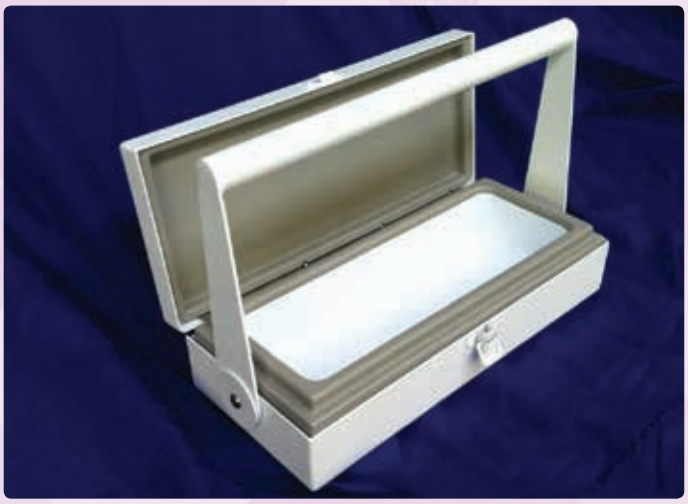
**Material Specifications:**

Outer case: mild steel (CR4) powder coated

Lead: rolled lead BSEN12588

Carriers: plastic lining – ABS

Removable tray: vac formed plastic HIPS



| Code | Description | Weight (kg) | Internal dimensions (mm) | External dimensions (mm) |
|---|---|---|---|---|
| 4BT-SCBF3 | Small Carrier, 3mm Fixed Handle | 4.2 | 240x55x40 | 280x95x70 |
| 4BT-SCBP3 | Small Carrier, 3mm Pivot Handle | 4.2 | | |
| 4BT-SCBF6 | Small Carrier, 6mm Fixed Handle | 6.0 | | |
| 4BT-SCBP6 | Small Carrier, 6mm Pivot Handle | 6.0 | | |
| 4BT-SCBT | Replacement Tray for Small Carrier Box 5/Box | | | |
| 4BT-MCBF3 | Medium Carrier, 3mm Fixed Handle | 4.8 | 240x75x40 | 280x120x70 |
| 4BT-MCBP3 | Medium Carrier, 3mm Pivot Handle | 4.8 | | |
| 4BT-MCBF6 | Medium Carrier, 6mm Fixed Handle | 7.7 | | |
| 4BT-MCBP6 | Medium Carrier, 6mm Pivot Handle | 7.7 | | |
| 4BT-MCBT | Replacement Tray for Medium Carrier Box 5/Box | | | |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | | |

## β SHIELDED ACRYLIC SYRINGE CARRIER

This carrying box has a powder coated steel exterior with 10mm thick acrylic shielding and a replaceable lift out plastic tray.

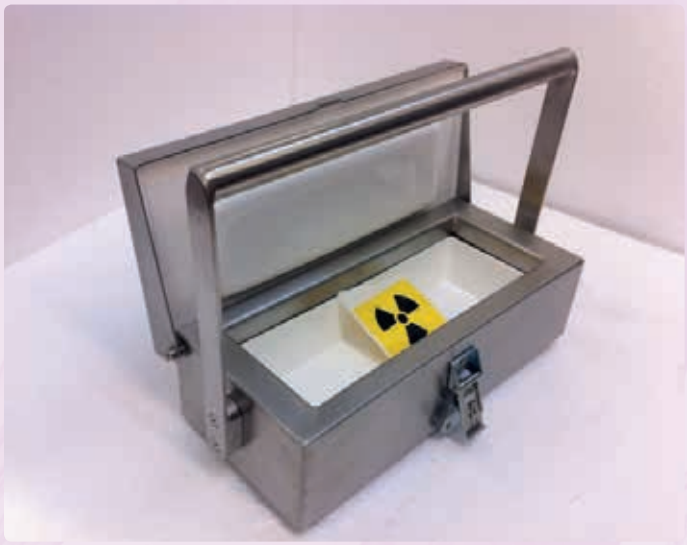
| Code | Description | Internal dimensions (mm) | External dimensions (mm) |
|---|---|---|---|
| 4BT-ACRYLSC10 | 10mm Thick Acrylic Carrier | 240x55x40 | 280x95x80 |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | |

## CLEAN ROOM SYRINGE CARRIER

This carrying box has a fresh new look and design as well as a new feel to it. The new carrying is designed out of stainless steel to be used in a clean room environment which means the carrying box could be hose down, although it is still usable in other departments. A butterfly lock is used so if there were any bumps while the carrying box is traveling, the catch will not come loose and cause the lid to open by accident. The handle is also taller making the lid easier to open and close.

The lid also has a return lip on it which sits on the back of the carrying box body to prevent the box from falling backwards and keeps the lid in an upright position.

Weight = 7.3kg (3mm Pb)
External Size: 300x160x270mm LxWxH
Internal Size: 228x84x45mm LxWxH



| Code | Description | Weight (kg) | Internal dimensions (mm) | External dimensions (mm) |
|---|---|---|---|---|
| 4BT.CRSC3 | Clean Room Carrier, 3mm Fixed Handle | 7.3kg (3mm Pb) | 228x84x45 (LxWxH) | 300x160x270 (LxWxH) |
| 4BT-CRSC6 | Clean Room Carrier, 6mm Fixed Handle | 11.2Kg (6mm Pb) | | |
| 4BT-CRSC10 | Clean Room Carrier, 10mm Fixed Handle | 16.8Kg (10mm Pb) | | |
| 4BT-MCBT | Replacement Tray for Large Carrier Box 5/Box | | | |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | | |

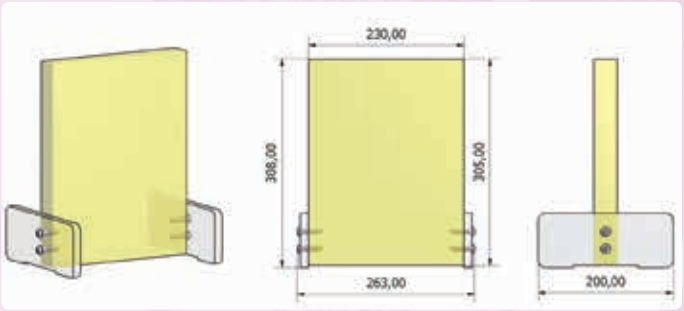
Protects body from radiation when working with radioactive material. Several types are available with varying sizes and shielding factors. Viewing window enables user to observe operations whilst still fully protected.

## PORTABLE ACRYL LEAD BENCH SHIELD

Tough shatter resistant lead loaded acryl shield which is transparent to permit unobstructed view of working area.

Provides front screening and is ideal for use in laminar flow cabinets. Shield is 35mm thick with a lead equivalent thickness of 1.5mm. Height: 305mm, Width: 230mm.

| Code | Description | Height (mm) | Width (mm) |
|---|---|---|---|
| 5BT-PBACRYLBS | Portable lead acrylic bench shield | 305 | 230 |
| OTHER SIZES AVAILABLE ON REQUEST | | | |



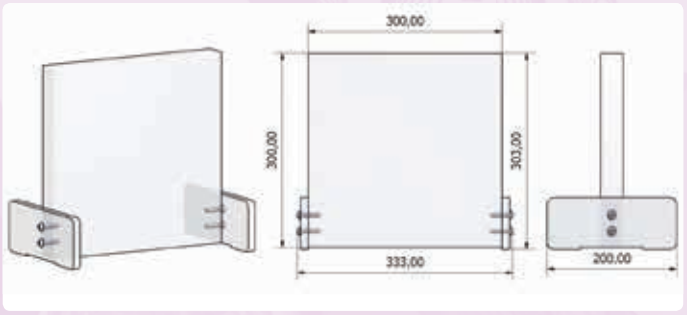
## PORTABLE P-32 BENCH SHIELD

Transparent shield to provide protection from the beta-emitting Phosphorous-32.

Fabricated from lightweight acrylic, the shield has a thickness of 25mm. Side legs provide excellent stability. The shield provides full size protection in a portable size.

Weight 3.25kg.

| Code | Description | Height (mm) | Width (mm) |
|---|---|---|---|
| 5BT-PP32BS | Portable P-32 bench shield | 300 | 300 |
| OTHER SIZES AVAILABLE ON REQUEST | | | |



## MINI VIEWING BARRIER

L-shaped lead barriers fitted with cantilevered lead glass window(s) to provide the user with an unobstructed view of the working area whilst still being fully protected. The lead glass window is angled at 45° to the vertical.

Small size and light weight makes these barriers ideal for use in laminar flow cabinets. The steel frame has a durable powder coating. The mini-barrier is available in three versions with varying degrees of shielding.

**Material Specifications:**

Lead: 6mm or 10mm BSEN12588

Finish: powder coated white gloss

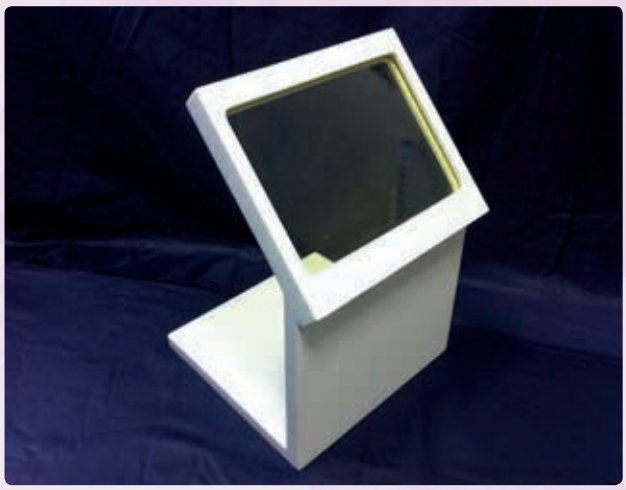
Lead Glass: See below

Base and non-glazed vertical sections have a stainless steel working surface.

| Dimensions (mm) | Width | Height | Depth |
|---|---|---|---|
| Base section | 275 | | 225 |
| Vertical section | 275 | 265 | |
| Window section | 250 | 200 | |
| Overall height | | 370 | |
| OTHER SIZES AVAILABLE ON REQUEST | | | |

| Code | Description |
|---|---|
| 5BT-BVB6 | Mini viewing barrier with 6mm lead shielding and 6mm lead glass window (2mm lead equivalence) |
| 5BT-BVB10 | Mini viewing barrier with 10mm lead shielding and 12mm lead glass window (3.5mm lead equivalence) |
| 5BT-BVB10W | Mini viewing barrier with 10mm lead shield and two 12mm lead glass windows, one in cantilevered section and one in vertical front section |
| 5BT-BVBSST | Removable stainless steel tray |
| 5BT-BVBNSS | Mini viewing barrier custom size |

## CORIAN VIEWING BARRIER



The new Corian Viewing Barrier uses a material which can be used with all clean room cleaning agents. This barrier is suitable for a clean room environment or any other departments. The barrier is seamless which eliminates dirt traps. As standard, this comes with 10mm lead shielding and 4mm LE Glass.

Custom sizes are available on request.

**Material Specifications and Dimensions (mm):**

Viewing area: 244x142mm (WxH)

Exterior Material: White Corian®

Base: 270x250mm (WxD)

Overall height: 380mm

Lead: BSEN 12588 10mm thick

Lead glass: 4mm LE-DIN EN 61331-2 (PROTECTIVE GLASS STANDARD)

| Code | Description |
|---|---|
| 5BT-CVB10 | Corian Viewing Barrier |
| 5BT-CVB10NSS | Corian Viewing Barrier Custom Size |

## LARGE VIEWING BARRIER

Larger barriers with heavier construction designed for open bench work. Provide greater protection than Mini-Barrier but are not suitable for use in laminar flow cabinets. Choice of lead thickness with FULL EQUIVALENT LEAD GLASS WINDOWS. Working surfaces are of stainless steel and the base contains a removable stainless steel tray designed to contain spills and allow for easy decontamination.

**Material Specifications:**

Lead glass: LE-DIN EN 61331-2 (protective glass standard)

Lead: BSEN12588

Outer surface: powder coated white texture

**Dimensions (mm)**

Base: 400

Overall height: 450

Lead glass window: 400x258

Other sizes and lead thicknesses available to special order. Please enquire for a quotation

| Code | Description |
|---|---|
| 5BT-LVB6 | Standard viewing barrier, 6mm lead shielding, Pb glass 6mm (lead equivalence) |
| 5BT-LVB10 | Standard viewing barrier, 10mm lead shielding, Pb glass 10mm (lead equivalence) |
| 5BT-LVB20 | Standard viewing barrier, 20mm lead shielding, Pb glass 20mm (lead equivalence) |
| 5BT-LVBPBSTD | Standard viewing barrier, 30mm lead shielding, Pb glass 30mm (lead equivalence) |
| 5BT-LVBPBMOB | Narrow viewing barrier, 30mm lead shielding, Pb glass 30mm (lead equivalence) |
| 502LS-NSS | Non-standard sizes also available on request |

## CORIAN BENCH SHIELD TO CUSTOMER REQUIREMENTS

The Corain Bench Shield is not a standard product which comes at a standard size. This can be made with as many or as little sides as you like. As big or as small as you like and with any lead thickness you like. This gives you the perfect chance to get the product you want, exactly as you want it.

This product was introduced into our product line as an alternative to people whom use bare lead bricks to place sources behind on a bench top. This will be the perfect replacement as the corian we use is ideal to be used in most departments including a clean room department. The Corian can be used with all clean room cleaning agents and is seamless which eliminates dirt traps. The lead is fully enclosed within the Corian to ensure that this is the cleaniest the product can be.

Below are a couple of examples we have made which we think will give you the perfect starting point to design you very own Corian Bench Shield.

## LEAD LINED SHIELDS FOR RADIOACTIVE WASTE

Our range of lead lined sharps shields comprises three basic sizes and a choice of two lead thicknesses, 3mm or 6mm.

The shields are of steel construction with a lead lining. The outer surfaces have a durable epoxy stove enamel finish and inner surfaces are covered with a white plastic liner.

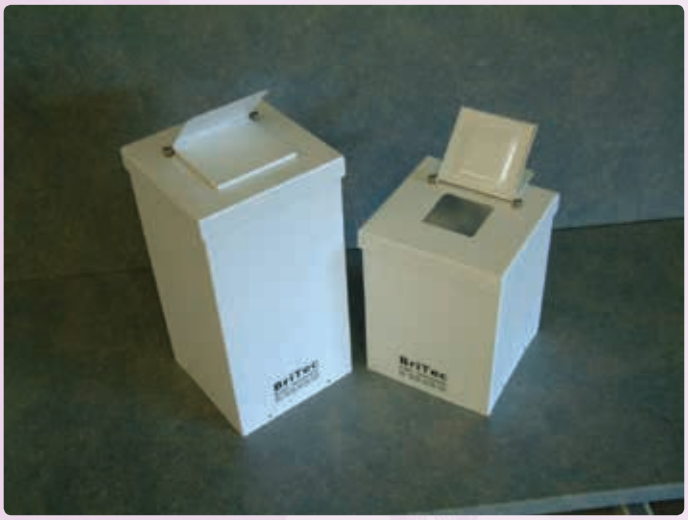
The top is removable for the replacement of the disposable sharps container. The top is fitted with a flip open lid to provide easy access to the opening in the container. The lid can be operated with the back of the hand to avoid possible contamination.

**Material Specifications:**

Outer case: mild steel (CR4) powder coated

Lead: rolled lead BSEN12588 Code 7 or Code 5

Plastic Lining: 480 micron plastic



| Code | Make | Model | Internal dimensions LxWxH (mm) | External dimensions LxWxH (mm) | Weight 3mm (kg) | Weight 6mm (kg) |
|---|---|---|---|---|---|---|
| 6BT-MBWC3/6SP60 | Rexam Sharpak | 60 Plus | 220x200x295 | 256x256x320 | 18 | 26.8 |
| 6BT-MBWC3/6SP120 | Rexam Sharpak | 120 Plus | 260x260x330 | 295x295x355 | 26.3 | 39.4 |
| 6BT-LBWC3/6SP220 | Rexam Sharpak | 220 Plus | 320x320x400 | 360x360x425 | 43 | 62.5 |
| 6BT-SBWC3/6SS4 | Sharpsafe | 4 Litre | 180x180x260 | 212x212x285 | 13,8 | 20.9 |
| 6BT-MBWC3/6SS7 | Sharpsafe | 7 Litre | 180x180x390 | 212x212x415 | 19.1 | 28.5 |
| 6BT-MBWC3/6SS11 | Sharpsafe | 11 Litre | 300x300x320 | 335x335x345 | 25 | 37.1 |
| 6BT-LBWC3/6SS24 | Sharpsafe | 24 Litre | 470x255x350 | 520x305x470 | TBA | TBA |
| 6BT-SBWC3/6DS5 | Daniels | 5 Litre | 180x180x300 | 212x212x320 | 16.6 | 24.7 |
| 6BT-MBWC3/6DS7 | Daniels | 7 Litre | 260 X260x220 | 295x295x240 | 19.6 | 29.6 |
| 6BT-MBWC3/6DS11 | Daniels | 11.5 Litre | 300x300x260 | 330x330x285 | 22.9 | 37.3 |
| 6BT-LBWC3/6DS22 | Daniels | 22 Litre | 350x350x355 | 380x380x380 | 38 | 55.3 |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | | | | |

## CLEAN ROOM WASTE CONTAINER

Stainless steel waste container for disposing of used radioactive sources and/or needles.

The top is removable for the replacement of the disposable sharps container. The top is fitted with a flip lid to provide easy access to the sharp container.

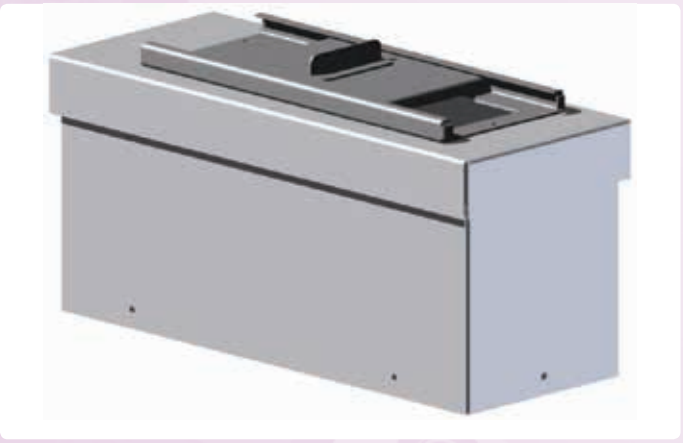
The lid can be operated with the back of the hand to avoid possible contamination. The waste container is shielded with lead which is encapsulated in a seamless stainless steel body, this also allows efficient disinfection making it ideal for a clean room environment.

The stainless steel waste container comes in either 3mm, 6mm or 10mm lead shielding.

| Code | Description | Lead Thickness (mm) |
|---|---|---|
| 6BT-CRWC3 | Custom clean room waste container, 3mm lead shielding | 3 |
| 6BT-CRWC6 | Custom clean room waste container, 6mm lead shielding | 6 |
| 6BT-CRWC10 | Custom clean room waste container, 10mm lead shielding | 10 |

## BETA GAMMA SHARPS BIN

Our beta gamma sharp bins are made from 1mm mild steel body and base with a 1.2mm stainless steel lid. The bin is then lined with a sheet of 5mm thick aluminium and a sheet of 2mm thick lead which is then lined with a white durable plastic giving the inside of the bin a clean look. The lid either contains a flip lid or can contain a slider lid. The entire out side of the bin would be powder coated white gloss giving the bin a clean look and feel.



| Code | Description | External dimensions (mm) | Internal dimensions (mm) |
|---|---|---|---|
| 6BT-SWCBEGA | Beta/Gamma Waste Container | 290x110x135 | 255x75x110 |
| OTHER SIZES AVAILABLE ON REQUEST | | | |

## CLEAN ROOM PEDAL BIN

The new stainless steel pedal bin has a seamless inner liner and outer case, lead capsulated inside the body to make this pedal bin ideal for a clean room environment.

The top lid is operated by a foot pedal and there is a removable lead lined inner lid with a central stainless steel plate fixed to the underside of the outer lid.

The shields are primarily for use with plastic sacks but can be adapted for use with most containers.

| Code | Description | Lead Thickness (mm) | Internal dimensions LxWxH (mm) | External dimensions LxWxH (mm) | Approximate weight (kg) |
|---|---|---|---|---|---|
| 6BT-CRPB27 | 27 Litre Pedal Bin | 6 | 260x260x400 | 530x300x600 | 64 |
| 6BT-CRPB40 | 40 Litre Pedal Bin | 6 | 260x260x600 | 530x300x800 | 76 |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | | | |

## PEDAL BIN WASTE CONTAINERS

Our bins have been modified to provide greater durability, stability and ease of use. They are available in two sizes with a choice of lead shielding – 3mm or 6mm.
The steel box has a powder coated outer surface and the inner surface is lined with plastic to ensure that any spillages are contained within the bin. The top shielded lid is operated by a foot pedal. The lid is fitted with a damper mechanism allowing it to close smoothly. The bin is supplied with two removeable lead lined inner lids, one large for use with sacks and one smaller for use with small items. The pedal bins are primarily for use with plastic sacks but can be adapted for use with some sharps containers.

**Material Specifications:**

Outer case: mild steel (CR4) powder coated

Lead: rolled lead BSEN12588 Code 7 or Code 5

Plastic Lining: 480 micron plastic

| Code | Description | Internal dimensions (mm) | External dimensions (mm) | Opening aperture (mm) |
|---|---|---|---|---|
| 6BT-SPB3/6 | Small 17 Litre | 200x200x500 | 270x395x640 | 80x80 & 210x210 |
| 6BT-LPB3/6 | Large 40 Litre | 250x250x650 | 325x475x825 | 80x80 & 250x250 |
| OTHER SIZES AVAILABLE ON REQUEST | | | | |

## SHIELDED PERAMBULATOR

The Perambulator is available with either a brushed stainless steel or white powder coated finish and a white liner inside. It is equipped with either 3mm Pb or 6mm Pb.

It has two steering castors at the front and two lockable castors at the back. This is designed to move/store large volumes of waste and is provided with a lockable lid for security.

| Code | Description | Internal dimensions (mm) | External dimensions (mm) |
|---|---|---|---|
| 6BT-PERAMB3 | Perambulator 3mm Lead | 360x480x460 | 400x660x500 |
| 6BT-PERAMB6 | Perambulator 6mm Lead | 360x480x460 | 400x660x500 |
| CUSTOM SIZES AVAILABLE ON REQUEST | | | |

## MOBILE DISPENSING TROLLEY

This a mobile dispensing trolley which is used for storing and using small radioactive isotopes. The mobile dispensing trolley comes with a hinged lid, 3/6mm Pb on the back and sides of the work station, a single lockable door which is unshielded.

The storage compartment comes with a stainless steel liner which is lined with 3/6mm Pb. The bottom door then also has a stainless liner which is also lined with 3/6mm Pb. Also the mobile dispensing trolley comes with a white powdered coated finish the total external sizes are:

height = 1300mm (including castors)

width = 650mm

depth = 550mm

Work station internal HxWxD (mm): 420x615x520

Cupboard internal HxWxD (mm): 615x560x500

| Code | Description |
|---|---|
| 6BT-MSDU3/6 | Mobile Dispensing Trolley |
| CUSTOM SIZES AVAILABLE ON REQUEST | |

## ISOTOPE STORAGE SYSTEMS

Modular systems can be supplied to suit any purpose with combinations of storage safes, storage drawers and cupboards. The lead thickness of any section can be chosen to suit the application of that section.

Examples of a few systems currently installed:

## STANDARD SHIELDED SAFES FOR STORAGE OF RADIOISOTOPES

Our standard range of heavy duty shielded safes comprises of two sizes with either 25mm or 50mm lead shielding. The outer surfaces have a durable epoxy stove enamel finish and the inside is finished with a stainless steel liner. The safes have a hinged front door, opening either side (depending on customer preference) and are lockable.

| Code | Shielding (mm Pb) | External size (mm) | Internal size (mm) | Approximate weight (kg) |
|---|---|---|---|---|
| 7BT-SSAFE25 | 25 | 370x370x370 | 300x300x300 | 250 |
| 7BT-SSAFE50 | 50 | 430x430x430 | 300x300x300 | 550 |
| 7BT-SAFEA25 | 25 | 600x600x600 | 485x485x485 | 700 |
| 7BT-SAFEA50 | 50 | 600x600x600 | 460x460x460 | 1,100 |
| CUSTOM SIZES AND DIFFERENT SHIELDING THICKNESSES AVAILABLE ON REQUEST | | | | |

## ROLL TOP SHIELDED SAFES FOR STORAGE OF RADIOISOTOPES

Available with 10mm, 25mm or 50mm lead shielding with a roll top sliding door.

| Code | Description |
|---|---|
| 7BT-RTSSAFE10 | Roll Top Safe 10mm lead |
| 7BT-RTSSAFE25 | Roll Top Safe 25mm lead |
| 7BT-RTSSAFE50 | Roll Top Safe 50mm lead |
| CUSTOM SIZES AND DIFFERENT SHIELDING THICKNESSES AVAILABLE ON REQUEST | |

## STANDARD SHIELDED CUPBOARD

Our standard shielded cupboard is available with 3mm, 6mm or 10mm lead shielding. The outer surface has a durable epoxy stove enamel finish and the inside is finished with a stainless steel liner. The cupboard has two lockable hinged doors and is fitted with a one shelf – if required.

| Code | Shielding (mm Pb) | External size (mm) | Internal size (mm) | Approximate weight (kg) |
|---|---|---|---|---|
| 7BT-SCUPBOARD3 | 3 | 1040x520x800 | 912x443x702 | TBA |
| 7BT-SCUPBOARD6 | 6 | 1040x520x800 | 912x443x702 | TBA |
| CUSTOM SIZES AND DIFFERENT SHIELDING THICKNESSES AVAILABLE ON REQUEST | | | | |

## SHIELDED CUPBOARDS

Bright Technologies produce a range of lead lined cupboards to fit customer specifications.

## PORTABLE & STATIC FLOOD SOURCE STORAGE CASES

### Specifications

To fit flood source size (LxHxW): 790x485x22

External Dimensions (LxHxW): 825x510x55mm

Lid width: 86mm

3 or 6mm lead lining

Hinged lid

Stove enamelled outer surface

Internal surfaces lined with plastic

Weight: 40kg

NB. The case is now fitted with an extra castor at the front and T-bar handle for easier transportation.

| Code | Description |
|---|---|
| 9BT-PFSSC3 | Portable Flood source storage case 3mm lead |
| 9BT-PFSSC6 | Portable Flood source storage case 6mm lead |
| 9BT-FSSC3 | Static Flood source storage case 3mm lead |
| 9BT-FSSC6 | Static Flood source storage case 6mm lead |

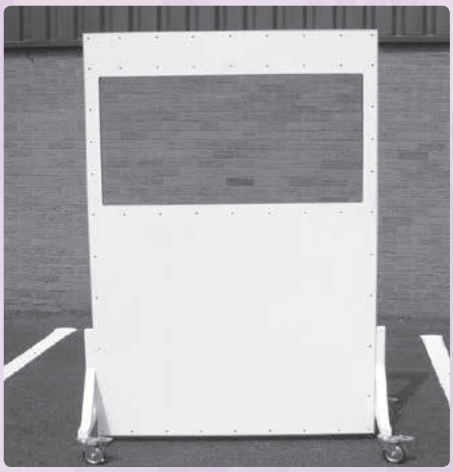
## CUPBOARDS FOR REFRIGERATORS & FREEZERS

Lead lined cupboard to accommodate fridges with a choice of either 3mm, 6mm, 10mm, 25mm or 50mm lead shielding. Cooling fans are also incorporated to prevent overheating. Customer to specify fridge/freezer size, and specifications.

| Code | Description | Shielding (mm Pb) |
|---|---|---|
| 7BT-PBFRIDGE3 | Lead lined refrigerator/freezer shield | 3 |
| 7BT-PBFRIDGE6 | Lead lined refrigerator/freezer shield | 6 |
| 7BT-PBFRIDGE10 | Lead lined refrigerator/freezer shield | 10 |
| 7BT-PBFRIDGE25 | Lead lined refrigerator/freezer shield | 25 |
| 7BT-PBFRIDGE50 | Lead lined refrigerator/freezer shield | 50 |

## MOBILE LEAD/LEAD-GLASS SCREENS

These bed shields can be used to protect personnel from radiation during examination of a patient. The shielding is made of lead sandwiched between two solid core plates, mounted in a steel frame on four castors. The window can be made from a variety of materials to customers specifications. Some examples are shown below. Please enquire for details.



| Code | External size (mm) | Window size (mm) |
|---|---|---|
| 9BT-VLSxxx | To customer specifications | To customer specifications |
| FOR A QUOTATION PLEASE ENQUIRE WITH YOUR SPECIFICATIONS | | |

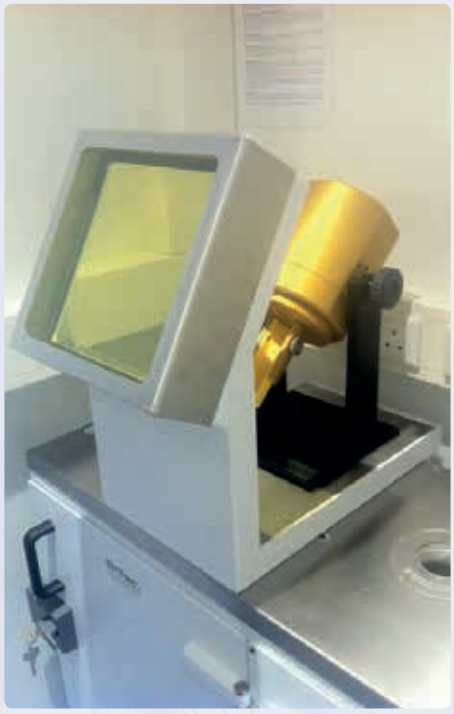
## PET SHIELDING

Bright Technologies is able to offer a complete design, manufacture and installation service for PET suites.

Our unique rotating vials shields with dispenser adaptor enables the quick accurate and safe dispensing of 511KeV isotopes with a minimum of exposure to dispensing personnel.

We have installed this system into major teaching hospitals in the UK and Europe. Please contact us for further information and prices on our wide range of PET shielding products.

## PET SHIELDING



## 511KeV TUNGSTEN SYRINGE SHIELDS

With our new and popular design, we have created an anti-roll feature for this syringe shield. It uses a screwlock mechanism to hold the syringe in place when in use.

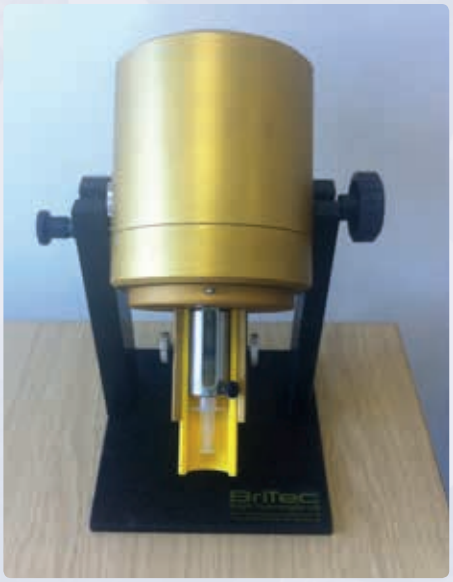
### Material Specifications

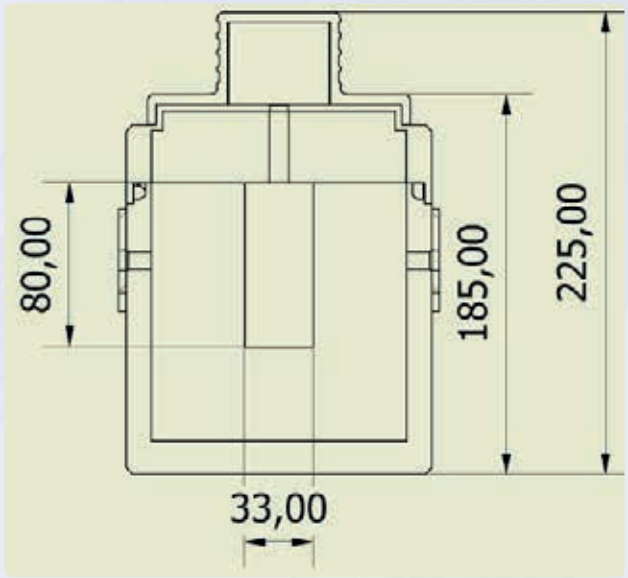
Barrel: Tungsten 90% plus Ni & Cu balanced
Window: lead glass 11-13mm (4mm LE)
Screw: M4x16 socket cap

| Code | Description | Wall thickness | Weight (g) | Length (mm) | ID (mm) | OD (mm) |
|---|---|---|---|---|---|---|
| 1BT-511501 | FOR 1ml | 7.5mm | 500 | 72 | 8.5 | 24 |
| 1BT-511S01L | FOR 1ml Luer Lok | 7.5mm | 500 | 75 | 12 | 26 |
| 1BT-511S02/3 | FOR 2ml & 3ml | 7.5mm | 400 | 53 | 12 | 26 |
| 1BT-511S05 | FOR 5ml | 7.5mm | 600 | 60 | 16 | 31 |
| 1BT-511S10 | FOR 10ml | 7.5mm | 700 | 75 | 18 | 33 |

## PET DISPENSING POT

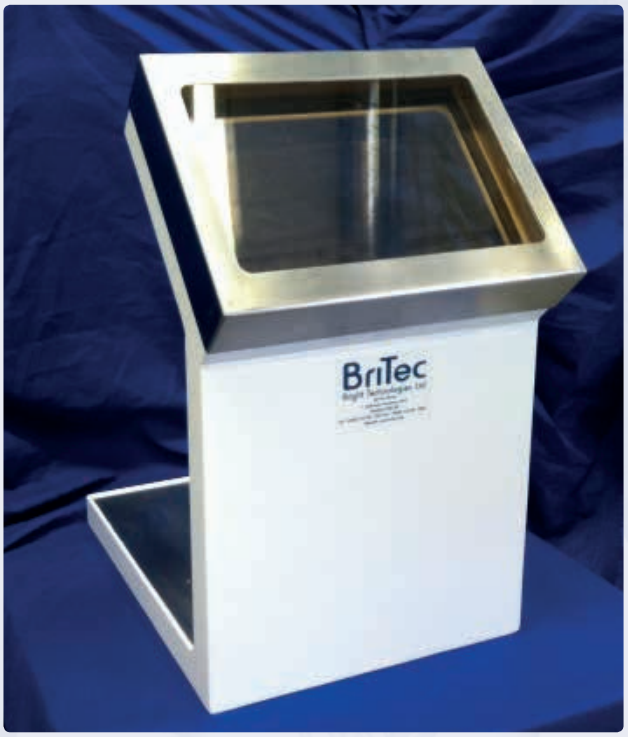
A simple and effective way of manually dispensing PET isotopes.





| Code | Description |
|---|---|
| 8BT-PETPOT1 | PET dispensing pot |

## STANDARD PET BARRIER




Heavy duty barriers with 30mm lead shielding and FULL EQUIVALENT LEAD GLASS WINDOW. Mainly used in PET departments and Mobile Scanners. Working surfaces are of stainless steel and the base contains a removable stainless steel tray designed to contain spills and allow for easy decontamination.

### Material Specifications

Lead glass: LE-DIN EN 61331-2 (PROTECTIVE GLASS STANDARD)

Lead: BSEN 12588

Outer frame: powder coated white gloss

Inner surfaces: stainless steel

Base: 350x450mm (WxD)

Overall height: 400mm

Viewing area: 210x310mm

| Code | Description |
|---|---|
| 5BT-LVBPBSTD | PET viewing barrier, 30mm lead shielding 30mm LE glass |
| 5BT-LVBPBMOB | Narrow viewing barrier, 30mm lead shielding 30mmLE glass |
| 502LS-NSS | Non-standard sizes available |

## MOBILE PROTECTION BARRIER

This shield protects operators from radiation energy 511KeV while retaining maximum accessiblity to the patient due to its narrow width. The shield is mobile with locking castors.

Lead shielding is 30mm. Lead glass is 30mm lead equivalent.

### Material Specifications

Frame: box section.

Finish: Epoxy powder coated, white.

Lead glass: 30mm le-din en 61331-2 (protective glass standard).

125mm diameter locking castors

Weight: 125kg

| Code | External size (mm) | Lead size (mm) | Glass size (mm) |
|---|---|---|---|
| 9BT-MOBPETBAR | 510x600x1480 | 500x400x30Pb | 400x265x80 (30mm LE) |
| CUSTOM SIZES AVAILABLE ON REQUEST | | | |

## NEW SYSTEM FOR ADMINISTERING PET ISOTOPES

Place syringe into Bri-Tec PET syringe shield.

Load syringe from vial dispensing station.

Remove loaded syringe in shield and place into mobile pot using the appropriate plastic sleeve.

Ensure that the syringe is capped and that it fits into the pot vertically.

Place lead shielded caps on top and bottom.

Take to patient and, after locking the castors, gently release the clamp knob to rotate the pot through 80° to face the patient.

Tighten up the clamp knob, remove leaded caps and inject the patient.

Rotate the pot after use to the vertical position and dispose of the used syringe where appropriate.

| Code | Description | External size (mm) |
|---|---|---|
| 8BT-PETADMINSYS | Pet Administration System | 410x410x890 |

## BRIGHT TECHNOLOGIES CUSTOM DESIGN & MANUFACTURE

Bright Technologies possesses a 3,500 square foot design and machine workshop. If you have items which you wish us to make as "one offs" or other products that you believe have a wider market then please call us. This service has become increasingly popular due to the growth of discerning users who require products which meet their specific need but who are also trying to keep within strict budgets. The term customised often deters people because the believe that such equipment will be very expensive, this is often not the case. Often what one person requires is exactly what many others also require. Your ideas therefore may be of benefit to not only yourself but to many others!

## VEENSTRA MODEL VDC603

The VDC-603 read-out is the plug & play basic model in the Dose Calibrator family.
Like all VDC models it operates as a high quality Dose Calibrator together with the fully digital Ionisation Chamber VIK-202 or VIK-203. Due to this VDC family concept, all different read-out models can be interchanged or upgraded using one and the same ionisation chamber.
The new VDC-603 is the most economical dose calibrator available in the market today!
It offers a simple and intuitive, three-keyoperated, user interface. The small and efficient design and easy-to-use functionality is focussed on the measurement and checking of radioactive isotopes.Both in vials and in syringes.
The highly accurate and reliable read-out of the ionisation chamber is presented in the one-line, backlit display: either in Becquerel or Curie, selectable by the user. Easy and straight forward, so ideal for any laboratory or hospital environment where you only want to check the activity of a limited number of isotopes, without a need for extensive, automatic quality control or labels printing. Due to the price and ease of use the VDC-603 is the ideal back-up or extra calibrator for a specific purpose or isotope such us, for instance, PET (F-18). The complete VDC library offers a choice of more then 55 isotopes and another 3 can be added as user-defined.
All Dose Calibrators come standard with one well liner and one dipper, both designed and marked specifically for the VIK-202 Ionisation Chamber.
VDC-603 has CE Medical Device marking and is FDA approved.
The heart of every Comecer range dose calibrator is the ionisation chamber: a completely digital detector that gives a fast, reliable reading. The 100% digital output allows the detector to be flexibly integrating into other instruments or structures with no need for a converter or a separate reading unit.
The VIK-202 ionisation chamber is pressurised at 14 bar (absolute) of Argon and its measurement field is up to 2 Ci of F18; the VIK-203 ionisation chamber is also available, pressurised at 1.4 bar (absolute) of Argon, for a measurement field of up to 20 Ci of F18.
As Comecer produces its own ionisation chambers in-house, we can evaluate dimensions or measurement features dedicated to individual needs.

### Specifications – Ionisation chamber

| | |
|---|---|
| Ionisation chamber | Pressurised (14 bar argon) |
| Ionisation voltage | 150V lithium battery |
| Well size | 60mm Ø x 250mm |
| Saturation | > 200 GBq (Tc-99m)<br>> 6 Ci (Tc-99m) |
| Resolution | 0.001MBq<br>0.01µCi |
| Energy range | 25KeV – 3MeV |
| Lead shielding | 3mm Pb |
| Linearity | ± 1% between 1MBq and 200GBq (Tc-99m) |
| Electrometer accuracy | ± 1% |
| Battery test accuracy | ± 5% |
| Temperature coefficient | 0.1%/°C between 10°C and 40°C at 5MBq and up |
| Reproducibility | ± 1% over 24 hours, stable conditions |
| Overall accuracy | ± 3% dependant of specific calibration source and geometric variations |
| Response time | Maximum 2 seconds for 95% of the end value |
| Ranges | Three ranges (auto ranging) |
| Isotope factor | Digital adjustment (library over 50 isotopes available) |
| Bias correction | Digital adjustment |
| Calibration | Digital adjustment |
| Zero adjustment | Digital control |
| Background subtraction | Digital control |
| Battery test | Digital control |
| Interface | RS-232C |
| Power supply | 5VDC, 250mA |
| Cable | 2.5 meters |
| Dimensions | 150mm Ø x 420mm |
| Weight | 15.5kg |

### Specifications controller/readout unit

| | |
|---|---|
| Readout: | Curie/Becquerel (service switch selectable) |
| Measuring range | 0.001MBq – 200GBq (Tc-99m)<br>0.01µCi – 6Ci. (Tc-99m) |
| Display | One line – 16 character LCD, 15mm digits |
| Control | 3 key foil keyboard with acoustic signal |
| Defined isotopes | > 55 selectable isotopes |
| User-definable isotopes | 3 |
| Temperature range | 0°C – 40°C/35°F – 105°F |
| Humidity | Max. 90% rel. humidity, non condensing |
| Power | 230V, 50/60Hz /25 Watt |
| Dimensions | 240 x 170 x 73mm |
| Weight | 0.9kg |

| Code | Description |
|---|---|
| 10VDC603 | Dose Calibrator |
| 10VDC-CD | Copper Dipper |
| 10VDC-MD | Molybdenum Breakthrough Set |
| 10VDC-ED | Extra Dipper |
| 10VDC-EWL3 | Extra Well Liner |
| 10VDC-PB20 | 20mm Lead Shielding for ionisation chamber |
| 10VDC-PB50 | 50mm Lead Shielding for ionisation chamber |

## VEENSTRA MODEL VDC-505

This state of the art dose-calibrator combines the best of two worlds. It has the extensive functionality of a software driven device like the Veenstra VDC-405. It has the robustness of firmware like the Veenstra VDC-404. So if you do not want to introduce another PC in your department or Hotlab, the VDC-505 is the best alternative.

Due to its special V-shaped design it offers a large touch-screen for easy read-out and operation. The graphical interface is very user-friendly with special coloured markings to guide its users through the most important routines. Another example of the ergonomic design are the inwards mounted connectors so that the device in spite of its size still requires a minimum of workspace. An optional special wall-mount stand is available.

In terms of connectivity the VDC-505 is state of the art. The dose calibrator can be integrated in a network (Ethernet base) and connected to a PC or extra display. Furthermore the system supports a range of label-printers

In terms of functionality the VDC-505 is well equipped for both vial and syringe measurements, including future dose calculations. Furthermore this model offers a complete set of calibrator quality control routines and protocols for daily and quarterly checks. These QC reports can then be downloaded to a PC by a standard RS-232 or even the optional Ethernet interface.

All VDC dose calibrators come as standard with one well liner and dipper. Optional extras available are:

- Extra lead shielding
- Mo-99 breakthrough set
- Copper dipper
- Extra well liner
- Extra dipper
- Label printer.



### Specifications controller/readout unit

| | |
|---|---|
| Readout | Curie/Becquerel (touch screen selectable) |
| Measuring range | 0.001MBq – 200GBq (Tc-99m)<br>0.01µCi – 6000mCi (Tc-99m) |
| Display | 8.4" TFT display, 800x600 resolution |
| Control | 8.4" touch screen |
| Operating system | Microsoft ® Windows XP Embedded |
| Peripheral interfaces | 1 x standard RS-232 for label printer<br>1 x standard RS-232 for PC<br>Ethernet (optional)<br>External monitor (optional)<br>Foot pedal switch (optional) |
| Defined isotopes | > 50 touch screen selectable isotopes |
| User definable isotopes | 100 user definable isotopes (name, half life, calibration factor) |
| Preset isotopes | 15 preset isotopes |
| Temperature range | 0°C – 40°C/35°F – 105°F |
| Humidity | Max. 90% rel. humidity, non condensing |
| Power | 85 – 264V ~, 47 – 63 Hz./90 Watt |
| Dimensions | 280 x 370 x 240mm |
| Weight | 4.5kg |

| Code | Description |
|---|---|
| 10VDC-505 | Dose Calibrator with touch screen and software package |
| 10VDC-CD | Copper Dipper |
| 10VDC-MD | Molybdenum Breakthrough Set |
| 10VDC-ED | Extra Dipper |
| 10VDC-EWL | Extra Well Liner |
| 10VDC-PB20 | 20mm Lead Shielding for ionisation chamber |
| 10VDC-PB50 | 50mm Lead Shielding for ionisation chamber |

Detector units for special purposes:

- Extended measurement range model
- Drop-through (sluice) model
- Different sized models.

### Specifications – Ionisation chamber

| | |
|---|---|
| Ionisation chamber | Pressurised (14 bar argon) |
| Ionisation voltage | 150V lithium battery |
| Well size | 60mm Ø x 250mm |
| Saturation | > 200 GBq (Tc-99m)<br>> 6 Ci (Tc-99m) |
| Resolution | 0.001MBq<br>0.01µCi |
| Energy range | 25KeV – 3MeV |
| Lead shielding | 3mm Pb |
| Linearity | ± 1% between 1MBq and 200GBq (Tc-99m) |
| Electrometer accuracy | ± 1% |
| Battery test accuracy | ± 5% |
| Temperature coefficient | 0.1%/°C between 10°C and 40°C at 5MBq and up |
| Reproducibility | ± 1% over 24 hours, stable conditions |
| Overall accuracy | ± 3% dependant of specific calibration source and geometric variations |
| Response time | Maximum 2 seconds for 95% of the end value |
| Ranges | Three ranges (auto ranging) |
| Isotope factor | Digital adjustment (library over 50 isotopes available) |
| Bias correction | Digital adjustment |
| Calibration | Digital adjustment |
| Zero adjustment | Digital control |
| Background subtraction | Digital control |
| Battery test | Digital control |
| Interface | RS-232C |
| Power supply | 5VDC, 250mA |
| Cable | 2.5 meters |
| Dimensions | 150mm Ø x 420mm |
| Weight | 15.5kg |

## VIRTICAL DOWNFLOW HOODS

**Company Backgrounds:**

Bright Technologies and Walker Safety Cabinets are both well established and successful companies within their own rights but have now embarked on a joint venture to deliver a forward thinking solution that meets current and future guidance, legislation and end user requirements.

Bright Technologies Ltd, often known as Bri Tec, has a renowned reputation for its expertise in Radiation Protection, Radioactive Material Handling, Shielding, Radio-Pharmaceutical Q.C., and MRI Accessories.

A key feature of Bri Tec is our Sheffield based in-house design and manufacturing facility. We have wide ranging experience of working with many NHS Trusts, Further Education Institutes and commercial companies. Our in-house design team and production facility allows us to take your ideas and designs, develop them and, put them into production. This versatility allows Bri Tec to undertake both low and high volume production runs.

In addition we are able to bespoke manufacture room installations so that the room space is optimally utilised in terms of both space and user friendliness. What do we mean by this? The installation fits both the user's requirements and the room – not the other way round!

Although Walker Safety Cabinets are relatively unknown to the nuclear medicine community the Walker brand goes back a long way. Walker Safety Cabinets are a fully independent, family run company that has been specialising in the design, installation and servicing of microbiological safety cabinets, laboratory fume cupboards, laminar flow cabinets, isolators and other specialist ventilated containment systems since 1989. Known throughout the UK, Europe and around the world as one of the scientific industry's leading containment specialists.

**The Product:**

Where optimum product protection is required, The Walker Horizontal Laminar Flow system is the UK's leading clean air solution for nuclear medicine bench top procedures. Its key features are:

- Tested to BS EN ISO 14644-1 Class 5
- Spacious, open working area
- Available in various sizes
- Clear side screens for maximum visibility
- Low energy high efficiency fans
- Protects the product from airborne contaminants at all times
- Recirculating airflows manage the lab environment cleanliness too
- 5 year warranty

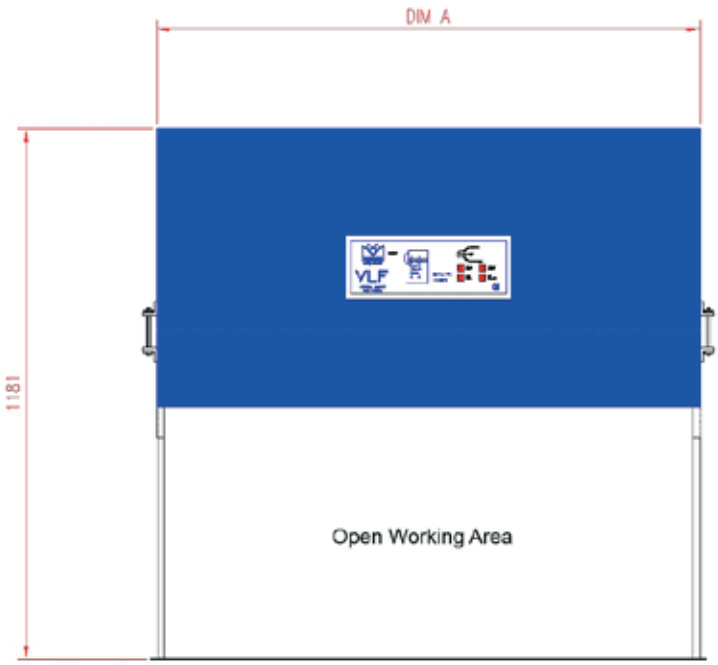
Apart from that standard range of products we also offer a bespoke design and build capability, this allows you to overcome any issues with space, process or equipment conflicts.

**Controls**:

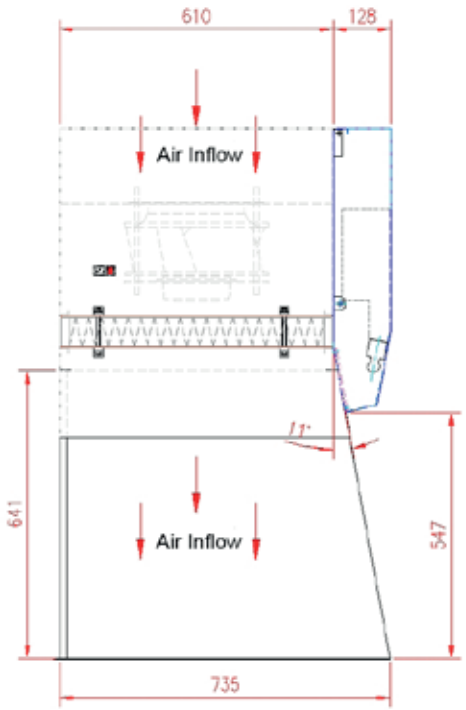
- Key switch for the on/off function
- Socket on/off push switch
- Alarm Mute switch
- Audible and Visual Low Airflow Alarm

**Optional Extras:**

- Additional Power outlets
- Front screens
- Network sockets
- UV Lamps
- Front Closure Panels




FRONT ELEVATION




SIDE ELEVATION

| | Details | BT9 | BT12 | BT15 | BT18 |
|---|---|---|---|---|---|
| Width (DIM A) | mm | 900 | 1200 | 1500 | 1800 |
| Depth | mm | 735 | 735 | 735 | 735 |
| Height | mm | 1180 | 1180 | 1180 | 1180 |
| Air Flow (at 0.45m/s) | $m^3/s$ | 0.28 | 0.38 | 0.47 | 0.57 |
| Load | Watts | 120 | 130 | 180 | 235 |
| Filter | HEPA H14 99.995% High efficiency | | | | |
| Lighting | >750 Lux at the working area | | | | |
| Noise | 57 to 62 dBA | | | | |

**Service:**

With a team of experienced service engineers located around the UK we offer annual maintenance, product certification and a 24/7 service and support function. If we cannot help over the phone then we guarantee that an engineer will always be with you promptly.

## TEC-CONTROL™ TEST KITS

Complete, self contained radiopharmaceutical quality control system for determining Tc-99m labelling efficiency using a simple miniaturized radio-chromatography system.

Three chromatographic procedures are utilised within the system. Specific grades of chromatographic papers perform rapid, precise separations of unbound (oxidised) and hydrolysed (partially reduced) Tc-99m yielding clear, easily discernible results indicating the quality of the labelling procedure. The replacement strips for certain kits are now also available.

Kit 151-770 for monoclonal antibodies can be used with I-131, I-125, Tc-99m and In-111. The new MAG3 test kit will determine soluble Tc-99m impurities and the hydrolysed Tc-99m.

**PLEASE NOTE THAT DUE TO CURRENT IATA REGULATIONS THE AIR TRANSPORT OF MANY VOLATILE SOLVENTS IS NOT CURRENTLY PERMITTED. THE TABLE BELOW SHOWS WHICH SOLVENT IS USED WITH THE CORRESPONDING TLC STRIP.**

## TEC-CONTROL™ SOLVENTS

| Radiopharmaceutical | Solvent(s) Required | Strips Required |
|---|---|---|
| Aluminium Breakthru 10 µg/ml 13150-781 | | 13150-782 |
| Aluminium Breakthru 5 µg/ml 13150-783 | | 13150-782 |
| Bicisate (Neurolite™) | Ethyl Acetate 99.% | 13150-130 |
| Diphosphonate | Acetone (HPLC Grade), Distilled $H_2O$ | 13150-001 & 13150-005 |
| Disofenin (Hepatolite™) | 150-160, Distilled $H_2O$ | 13150-122 & 13150-125 |
| DMSA | Acetone (HPLC Grade), | 13150-025 |
| DTPA | Acetone (HPLC Grade), Distilled $H_2O$ | 13150-001 & 13150-005 |
| Exametazine (Ceretec™) | Ethyl Acetate 99.% | 13150-130 |
| Glucoheptonate | Acetone (HPLC Grade), Distilled $H_2O$ | 13150-001 & 13150-005 |
| HDP | Acetone (HPLC Grade), Distilled $H_2O$ | 13150-001 & 13150-005 |
| MAA | Acetone (HPLC Grade), | 13150-001 |
| MAG3 (Mertiatide™) | Acetone, (HPLC Grade),<br>Chloroform 99.8%<br>Tetrahydrofuran 99+% | 13150-951 & 13150-952 |
| MDP | Acetone (HPLC Grade), Distilled $H_2O$ | 13150-001 & 13150-005 |
| Mebrofenin (Cholotec™) | 150-160, Distilled $H_2O$ | 13150-122 & 13150-125 |
| Pyrophosphate | Acetone (HPLC Grade), Distilled $H_2O$ | 13150-001 & 13150-005 |
| Sestamibi (Cardiolite™ and Miraluma™) | Ethyl Acetate 99.% | 13150-991 |
| Sulphur Colloid | Acetone (HPLC Grade) | 13150-001 |
| Tc-99m (reduced) | Acetone (HPLC Grade), | 13150-001 |
| Tc-99m Monocolonal Antibodies | 0.9% Saline | 13150-771 |
| Tetrofosmin (Myoview™) | Ethyl Acetate 99.% | 13150-971 |
| In-111 Octreotide (Octreoscan™) | 150-773 & 0.9% Saline | 13150-771 |
| In-111 Monocolonal Antibodies | 150-773 & 0.9% Saline | 13150-771 |
| In-111/Y-90 Zevalin™ | 0.9% Saline | 13150-772 |
| I-131 Monoclonal Antibodies and Neutrospec™ | 0.9% Saline | 13150-771 |

## SURFACE SURVEY METER

This compact 3-range surface rate meter is equipped with an internal 2 inch diameter pancake GM detector and built-in speaker. The detector's thin window is recessed and protected by an aluminium grill. Its small size, light weight, and one-hand operation make this unit an ideal tool for surveying bench tops and other surfaces, and for checking hands and clothing for radioactive contamination. The meter face reads in both cpm and mR/h. Anti-saturation circuitry keeps meter needle at full scale in high radiation fields.

### FEATURES

- Reads in both cpm and mR/h
- Easy contamination monitoring of bench-tops, clothing and hands
- Monitors alpha, beta, and gamma
- Built-in pancake detector
- Range: 0 to 50,000cpm, 0 to 15mR/hr
- Three multiplier ranges: x1, x10, x100
- Built-in speaker
- Anti-saturation circuit prevents false "zero" readings
- One-handed operation

### SPECIFICATIONS

- Meter Dial: 2.5" (6cm) rectangular
- Ranges: Three linear: 0-500; 0-5,000; 0-50,000cpm (0-0.15; 0-1.5; 0-15mR/h)
- Switch Positions: Off, Battery Test, x100, x10, x1
- Audio: Internal speaker
- Detector: Halogen-quenched pancake GM tube
- Diameter: 2'' (5cm)
- Window Diameter: 1.75" (4.5cm)
- Window Thickness: 1.5mg/cm$^2$
- Background: Typical 50cpm
- Efficiency: 100% for all betas and alphas that have the energy to penetrate the thin window
- Gamma Sensitivity: Nominal is 3000cpm/mR/h (based on Cs 137)
- Calibration: Single master calibration potentiometer, individual potentiometers for each range
- Voltage: 900V nominal
- Current Drain: 3mA typical
- Power: 9 volt battery (Eveready 1222 carbon, E146X mercury, or equivalent)
- Battery Life: Typically 100 hours under normal operation
- Feet: Neoprene feet for placement on surface without contaminating bottom surface of unit
- Handle: Swivel type, polished anodized aluminium
- Dimensions (WxLxH): 3"x5.25"x2.25" (8x13x6cm) excluding meter and handle
- Weight: 22oz (625g)

| Code | Description |
|---|---|
| 12069-310 | Surface survey meter |

## COMO 170

### Technical Data

| | |
|---|---|
| Detector type | thin-layer plastic scintillation detector with ZnS coating |
| Detector size | 170cm² |
| Background | α: approx. 0.1cps<br>α/β: approx. 15 – 25cps |
| Background subtraction | with adjustable background measurement time |
| Measurement electronics | µ-controller supported electronics |
| Keyboard | foil keyboard, 5 function keys |
| Alarm | separately adjustable for each nuclide, acoustic alarm |
| Result display | either in cps or nuclide-specific in Bq or Bq/cm² |
| Nuclides | 25 nuclides, preset calibration factors, user-specific nuclides may be added integrated auto calibration |
| Measurement time | continuous, for stationary operation adjustable in s |
| Display | large-area, graphical LC display 128x64 pixels, with illumination, duration of illumination adjustable |
| Power supply | 2 batteries, AA Mignon or corresponding rechargeable batteries, (NiCd, NiMH), can be charged via charge unit, in stationary mode via wall station with inductive charge conservation |
| Temperature range | –10°C to 40°C, no condensation<br>special version up to –20°C |
| Dimensions | 280x125x135mm (L(with handle)xWxH) |
| Weight | ca. 750g (including batteries) |
| Housing | ergonomically shaped plastic housing |
| Interfaces | serial interface RS-232<br>boost charge/line operated<br>external detectors |

### Portable Contamination Monitor with thin plastic scintillation detector for highly sensitive measurement of α-, β- and γ-contamination

Regulations for Radiation Protection Ordinance require that anyone working with unsealed radioactive materials must be checked regularly to see whether work areas, protective clothing or the body surface has become contaminated.

### System Features

- the innovative detector technology with thin-layer plastic scintillator provides key benefits over gas-filled or gas flow proportional detectors. These include reduced operating expenses, i.e. consumable gas and high repair costs in the case of Xenon detectors
- α-, β- and γ-radiation can be measured using one detector. The measuring system automatically detects the presence of α-radiation. Simultaneous, selective measurement of α- and β-/γ-contaminations is possible
- user-friendly, menu-driven configuration
- important measurement parameters are protected by pass code number
- calibrated reference nuclide file with integrated auto calibration
- lightweight
- integrated storage of measurement data, software for readout and processing of measurement data
- connection option for different external detectors, e.g. for dose rate measurement
- automatic detector identification
- fixed location operation with wall mount including of inductive charging, controlling of measurement time and switching between background measurement and contamination measurement.

| Code | Description |
|---|---|
| 12BT-COMO170 | CoMo 170 Contamination Monitor |
| 12BT-COMO170AWM | Active Wall Mount |
| Subject to technical change without notice. | |

1. Stationary operation active wall station
2. With connected detector for dose rate measurement
3. CoMo placed in floor control device

| Efficiencies for various radionuclides Average values from measurements with 100cm² compound | |
|---|---|
| C-14 | approx. 14 % |
| F-18 | approx. 18 % |
| P-32 | approx. 25 % |
| S-35 | approx. 12 % |
| Cl-36 | approx. 42 % |
| K-40 | approx. 30 % |
| Co-57 | approx. 7 % |
| Co-60 | approx. 27 % |
| Sr-89 | approx. 27 % |
| Sr-90/Y-90 (related to Sr-90) | approx. 42 % |
| Tc-99m | approx. 3 % |
| In-111 | approx. 8 % |
| I-123 | approx. 7 % |
| I-125 | approx. 12 % |
| I-131 | approx. 21 % |
| Cs-137 | approx. 35 % |
| Au-198 | approx. 23 % |
| Ti-204 | approx. 43 % |
| Am-241 α | approx. 22 % |
| P-238 α | approx. 12 % |
| U-238 α | approx. 26 % |

Nuklear-Medizintechnik Dresden GmbH

## COMO 170 – SMEAR TEST COUNTER

Make a smear test counter from your mobile contamination monitor CoMo-170. In daily practice of radiation protection, not only direct contamination monitoring with the mobile contamination monitor is required, but also the indirect contamination monitoring by means of taking a smear test sample, especially to find out if the contamination is sticking.

Thanks to the new smear test station you can create a comfortable smear test counter together with the CoMo-170.

### Advantages

- Reproducible geometry of the smear test sample to the detector system
- For α- and β/γ-contamination measurements
- Sample drawer prepared for 60/120mm Ø sample plates and smear test swabs on carrying paper (max. 100x130mm)
- Automatic background measurement and subtraction
- Definable measuring parameters (nuclide, detection surface, smear factor, measuring time, alarm threshold)
- As desired entry of a fixed measuring time or automatic measuring time calculation according to defined statistical error (%)
- Integrated auto calibration routine, 8 definable nuclides
- Power supply of the smear test counter via adapter, incl. charging of the rechargeable batteries in the CoMo
- Data storage. Stored data can be printed or transferred to a PC-system for further processing
- Simple operation with user guidance (text hints: e.g. No Contamination! Take out sample)
- Low-budget solution.

| Code | Description |
|---|---|
| 12BT-COMO170ST | Como Smear Test Counter |
| 12BT-COMO170DRM | Como Dose Rate Meter |
| Subject to technical change without notice. | |

## COMO 170 – DOSE RATE METER

1. Indication of position of the Geiger Müller counter tube
2. Inner view Geiger Müller counter tube on detector housing

2 functions – 1 measuring instrument

Use your contamination monitor CoMo-170 also as a dose rate meter. In daily practice of radiation protection, not only contamination monitoring but also dose rate measurement is required. The new contamination monitor CoMo-170 offers the combination for both measuring tasks in one instrument. In the front surface of the CoMo-170 (picture), a Geiger-Müller counter tube is integrated additionally, so that you can measure both contamination and dose rate (e.g. in µSv/h). An economical and practical solution.

### Advantages

- Integrated GM-counter tube for dose rate measurement from 1µSv/h till 20mSv/h
- New dose variable H*(10) according to German radiation protection ordinance
- Energy range approx. 40KeV – 1.3 MeV
- Detector position indicated on front surface
- Simple switch to dose rate measurement in quick menu
- Automatic measuring value display in nSv/h – µSv/h or mSv/h, autoranging-operation
- Digital and analogue measuring value display
- Definable alarm threshold for dose rate measurement
- Measuring values can be stored. Stored measuring data can be printed or transferred to a PC-system for further processing
- Simple operation with user guidance
- Economical solution – less than 50% of the price for a separate dose rate meter.

## HAND, FOOT & CLOTHING MONITOR

### Hand-Foot-Clothing Contamination Monitor with large-area, thin-layer plastic scintillation detectors

Regulations for Radiation Protection Ordinance require that anyone working with unsealed radioactive materials must be checked regularly to see whether work areas, protective clothing or the body surface has become contaminated.

### System Characteristics

- Modern detector technology based on thin-layer plastic scintillation detectors
- No gas-filled detectors - therefore considerable reduction of operating costs
- User-friendly, menu-driven configuration
- No gas supply required
- Suitable for a and b/g-contamination measurement
- Measuring electronics based on industrial grade PC
- Operator-friendly user interface, large-area colour-LCD display for indication of measurement values
- Nuclide selection menu, user-related nuclide pre-selection possible
- Hand probe detachable - therefore no additional frisker probe required
- Integrated calibration software for quality check.
- Ergonomic housing design
- Network-compatible
- Link of HFC-monitors to central database with parameter setting features

### Technical Data

| | |
|---|---|
| Detector type | Large-area, thin-layer plastic scintillation detectors (PSD) with ZnS-coating for a and b/g measurements with integrated photomultiplier and detector electronics For typical sensitivities see chart |
| Measuring channels | |
| • hands | 2 PS-detectors (as desired also with 4 hand detectors)<br>1 detector per hand<br>Start of measurement through light barriers |
| • feet | 2 PS-detectors, 1 detector per foot |
| • body | Right hand detector detachable for body measurement |
| Background subtraction | With adjustable BG-measuring time, σ-threshold for new BG-measurement |
| Measuring electronics | Integrated industrial grade computer based on PC 104 |
| Keyboard | Foil keyboard |
| Alarm | Separately adjustable for each detector |
| Measuring value display | Selectable in cps or nuclide-related in Bq or Bq/cm²., integrated nuclide library |
| Measuring time | Adjustable in s |
| Display | Large-area, graphic colour LCD display 10.4“ |
| Power requirement | 110 - 240 V, 50 - 60 Hz, 60 VA |
| Dimensions | 1160 mm x 830 mm x 700 mm (H x W x D) |
| Weight | Approx. 45 kg) |
| Housing | Ergonomically shaped plastic steel housing |
| Interfaces | Serial interface RS-232<br>Parallel printer interface<br>External keyboard<br>USB-port<br>Network connection<br>Relay output for alarms |

| Typical sensitivities: | |
|---|---|
| C-14 | 8% |
| Cl-36 | 42% |
| Co-60 | 22% |
| Sr/Y-90 | 45% |
| Tc-99m | 4% |
| I-125 | 13% |
| I-131 | 20% |
| Am-241 α | 13% |

1. Detector display count rates of all detectors for function check
2. Transponder for person-related measurement
3. Version with 2 detectors per hand, horizontally mounted"t
4. Version with 2 detectors per hand, " vertically mounted"

## WALL MOUNTED HAND & CLOTHING MONITOR

The wall contamination monitor is an HFC monitor, reduced in size for the measurement of hands and clothing.

The left and right can be measured simultaneously. Integrated light barriers check the correct position and control the measuring time. The right hand probe can be taken out for flexible body or protective clothing check.

## WASTE CONTROL MONITOR

To avoid that contaminated radioactive waste in the nuclear-technical or nuclear-medical field is mixed with conventional waste and/or disposed as such, it makes sense to control all waste bags and boxes with a measuring instrument.

In order to let the cleaning staff work with the measuring system in routine, the monitor has to be user-friendly and safe. For this purpose we offer our Waste Control Monitor:

### System Characteristics

- For simple and safe checking of waste bags and boxes for contaminations or radioactive contents
- Designed for waste bags or HALIPAC-boxes, measuring chamber approx. 50 x 50 x 60 cm (W x D x H)
- U-shaped detector arrangement, 4 highly sensitive NaI scintillation detectors, each 70 x 70 mm, one detector per side and one at the bottom
- Housing open in front for easy loading
- Housing made of stainless steel and plastic with transport rolls
- Integrated light barrier for automatic switching from background measurement to activity measurement
- Automatic start of measurement, definable measuring time, display of remaining measuring time
- Measurement value display in CPS with background subtraction
- Red/green signal for measurement result, integrated acoustics
- Integrated calibration software for quality check.
- Protocol print function
- µ-controller-based measurement electronics
- Large-area LCD display (4 lines with 20 characters each)
- Setting of parameters, e.g. alarm threshold, only possible via protected menu (access code)

## WASTE CLEARANCE COUNTER

The Clearance Counter FMS is meant to check waste bags or boxes and contaminated clothing or utensils in nuclear medicine and industry.

Because mainly short life isotopes are used in nuclear medicine, most waste can be considered inactive after a certain storage time. The Clearance Counter FMS makes it possible to check if the activity value of the waste is below the levels for restricted disposal, which have been established by the authorities, and to store and record the measurement results. The monitor features an accounting software with calculation of activity decay and suggested date for repetition of measurement for final disposal.

The cleared waste can be disposed as regular waste which means a considerable cost reduction.

### Performance features

- Measurement/calculation of specific activity (Bq/g) taking into account nuclide- and container-specific calibration factors
- Reproducible activity measurement in 4 π-geometry
- Compact stainless steel housing with 2 doors for simple loading, movable
- Various versions of high-sensitive NaI-scintillation detectors for γ-activity measurements available (see below)
- As an alternative also with large-area, thin-layer plastic scintillation detectors (PVT) for β-activity measurements
- Optionally available with additional NaI-detectors for nuclide-specific measurement of key nuclides
- PC-based measuring system, industry-PC-system integrated in housing, measuring value display on flat LCD screen
- Measuring task-based software with data management system, easy to operate
- Calibration factors based on key nuclides and container types
- Recording of input and output measurement according to requirements of license and/or radiation protection ordinance
- Automatic consideration of waste weight via integrated balance with serial interface. Calculation of specific activity in Bq/g
- Calculation of moment of re-submission based on nuclide (half-life) and specific activity
- Output measurement after a definable number of half-lives or after calculated moment of falling below the release limit value
- Extensive database management program with data storage and stock book keeping, incl. data selection (variable filter functions)
- Printout of protocol for removal from stock, for documentation and presenting to the authorities for admission to dispose

### Versions

Types: FR 4 - system: 4 detectors (1 detector per side)

FR 6 - system: 6 detectors (like FR 4, incl. 1 bottom and 1 top detector)

FR 8 - system: 8 detectors (2 detectors per side)

FR 10 - system: 10 detectors (like FR 8, incl. 1 bottom and 1 top detector)

Detectors: NaI-scintillation detectors 70 x 70 x 13 mm. for γ-activity measurements

As an alternative for β-measurements: Thin-layer, large-area plastic-scintillation detectors (PVT), each 150 x 300 mm. (in case of plastic-scintillation detectors other inner dimensions of measuring chamber and external balance

### Technical Data

| | |
|---|---|
| Mechanics | FR 4/6 - measuring chamber, 50 x 50 x 59 cm (inner dimensions), FR 8/10 - measuring chamber, 50 x 50 x 89 cm (inner dimensions), 5 mm lead shielding, integrated in all sides, total weight approx. 130 kg (FR 4/6), approx. 190 kg (FR 8/10) |
| Electronics | integrated PC-system (PC-104 type), Pentium-basis operation via mouse pad and keyboard |
| LCD screen | integrated 12.1" LCD screen, color as an alternative external monitor |
| Balance | load cells integrated in bottom platform with serial interface RS 232, integration in FMS software, automatic data transfer taking into account tare of container type |
| Software | Windows operating system easy to use application software details see software description |
| Printer | label printer e.g. SEIKO SLP 440 for container labeling, label size e.g. 54 x 101 mm, ink jet printer for protocols, account tare of container type |

## NEEDLE RECAPPER

Health and Safety (Sharps Instruments in Healthcare) Regulations 2013

These Regulations implement the EU Council Directive 2010/32/EU on the prevention of sharps injuries in the hospital and healthcare sector. Many of the requirements contained in the Directive already formed part of health and safety law in Great Britain. The new regulations only contain those requirements that are not specifically addressed in existing legislation.

HSE has produced a Health Services Information sheet Health and Safety (Sharp Instruments in Healthcare) Regulations 2013[1] to assist employers and employees to understand their legal obligations under the Regulations.

The Directive

The Directive is published in the Official Journal of the European Union [2]. Member states, including the UK, have until 11th May 2013 to ensure that the provisions of the Directive have been implemented into national legislation.

## PRODUCT INFORMATION

The main body of the needle recapper is made from natural white acetal copolymer resin.

Both the top and the bottom of the needle recapper are recessed. The outside wall of the needle recapper has a non-slip textured finish to help you grip the recapper during cleaning, etc.

The Needle Recapper has 5 different holes. Please look at the description below to see which hole is most suitable for the needle you are using.

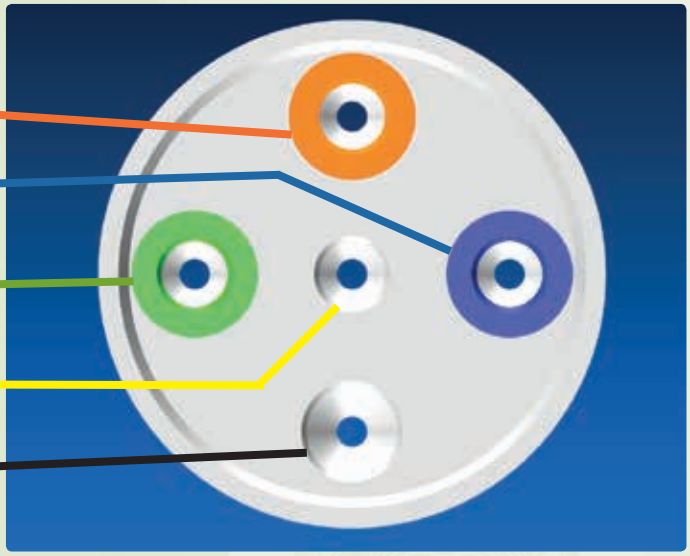
Orange Hole
Insulin type syringes

Blue Hole
Blue needles

Green Hole
Green needles

Centre Hole
Spinal (yellow) type needles

Large Hole
Miscellaneous large diameter needles



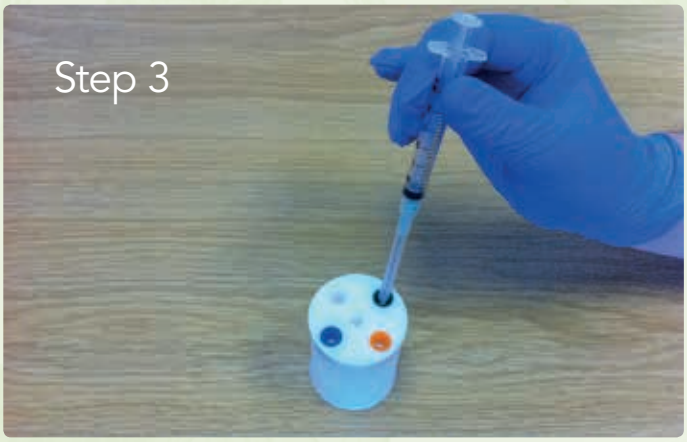
## HOW TO USE THE PRODUCT

Follow this guide on how to use the product safely;

Step 1
Place the Needle Recapper on a flat surface and place the cap in the correct hole for the syringe you are using.

Step 2
Using a single hand, place the needle into the cap inside the Needle Recapper and push firmly.

Step 3
Remove the syringe from the Needle Recapper and the needle should now be recapped.



# NEEDLE RECAPPER



## CLEANING/DISINFECTING/STERILISING YOUR NEEDLE RECAPPER

Acetal copolymer resin allows machined products the ability to retain dimensional integrity, maintain stability in water and most chemicals at elevated temperatures.

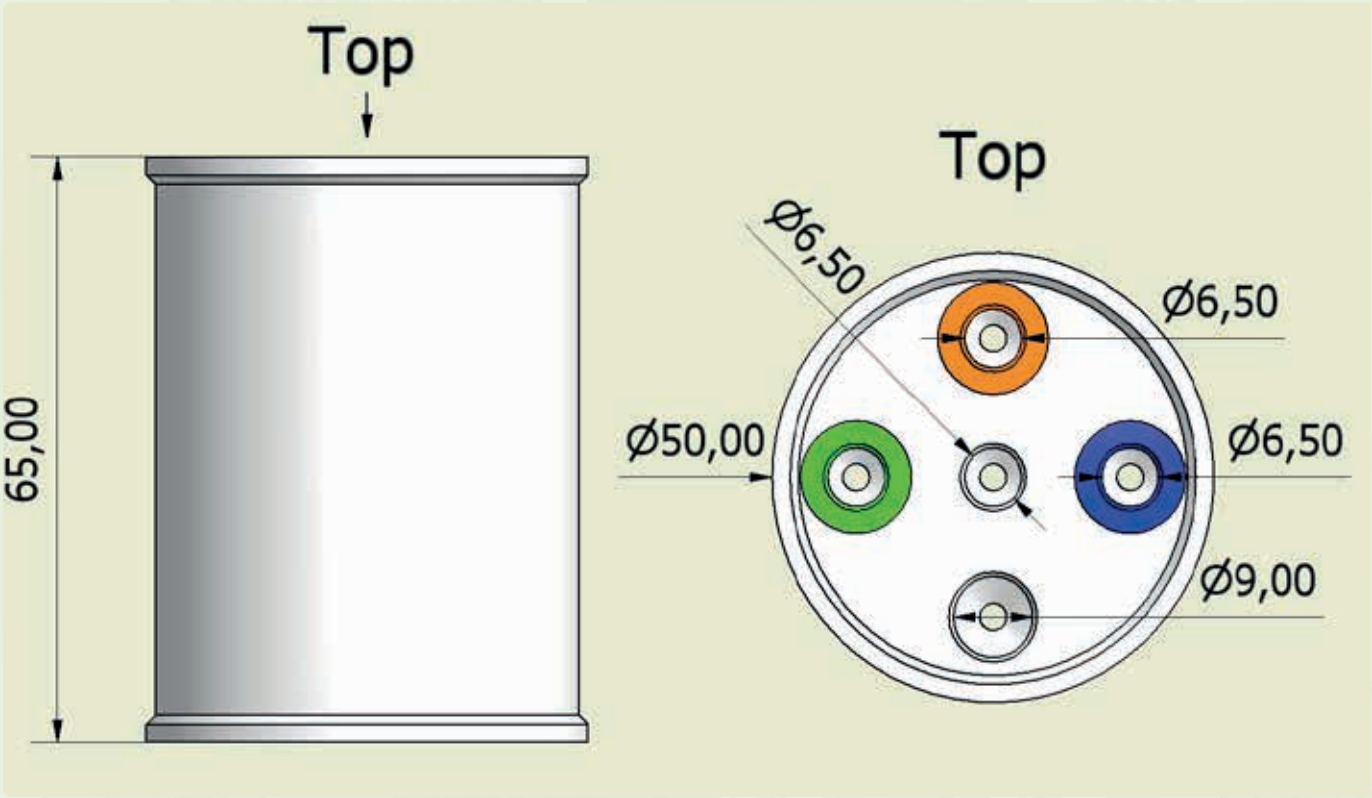
Recommended sterilization techniques for acetal include steam autoclaving (Maximum 121Celcius cycle) and Ethylene Oxide gas.

Disinfectants and germicides generally have no effect on acetal, however, acidic solutions can degrade the polymer over the long term.

Warnings:

Acetal is degraded by high concentrations of Hydrogen peroxide and/or Ozone – It is therefore not suitable to be sterilised using the newer type of Hydrogen peroxide 'Vapour Phase/Plasma' sterilisers. Mild acidic solutions, over the long term, can have a detrimental effect on acetal. Strong acid solutions, e.g.>1m HCl, may have an immediate detrimental effect.

## PRODUCT DIMENSIONS




| Code | Description |
|---|---|
| 1BT-NDLRECAP | Needle Recapper |

## AUTOTONG

This handling device enables vials to be handled securely without the user having to physically touch them.

The Autotong is pushed onto the vial lid. The vial can be handled/moved securely. The vial is released by pressing the plunger – as shown in the picture.

The Autotong is made of brass which is then coated in chrome plate to give the Autotong a clean look.

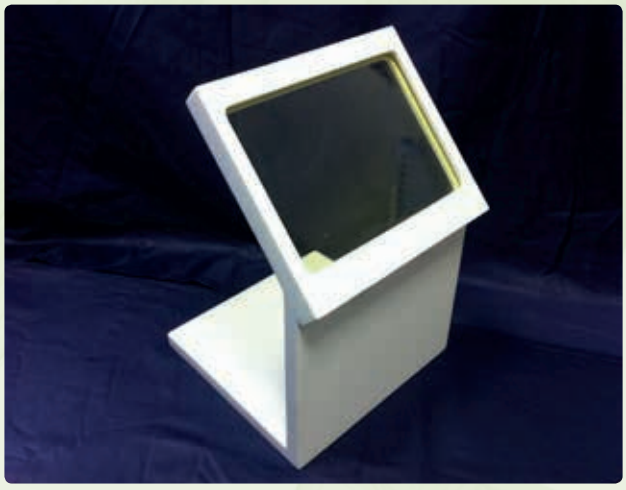
| Code | Description |
|---|---|
| 14BT-Autotong | Autotong |

## FORCEPS

Forceps made of surgical grade steel. Enable small objects such as radio-pharmaceutical vials and sources to be handled without physically touching them. Two styles available with curved or straight arms. Length of 240mm.

| Code | Description |
|---|---|
| 14BT-CF | Curved forceps |
| 14BT-SF | Straight forceps |

## CORIAN VIEWING BARRIER



The new Corian Viewing Barrier uses a material which can be used with all clean room cleaning agents. This barrier is suitable for a clean room environment or any other departments. The barrier is seamless which eliminates dirt traps. As standard, this comes with 10mm lead shielding and 4mm LE Glass.

Custom sizes are available on request.

**Material Specifications and Dimensions (mm):**

Viewing area: 244x142mm (WxH)

Exterior Material: White Corian®

Base: 270x250mm (WxD)

Overall height: 380mm

Lead: BSEN 12588 10mm thick

Lead glass: 4mm LE-DIN EN 61331-2 (PROTECTIVE GLASS STANDARD)

| Code | Description |
|---|---|
| 5BT-CVB10 | Corian Viewing Barrier |
| 5BT-CVB10NSS | Corian Viewing Barrier Custom Size |

## CORIAN BENCH SHIELD TO CUSTOMER REQUIREMENTS

The Corain Bench Shield is not a standard product which comes at a standard size. This can be made with as many or as little sides as you like. As big or as small as you like and with any lead thickness you like. This gives you the perfect chance to get the product you want, exactly as you want it.

This product was introduced into our product line as an alternative to people whom use bare lead bricks to place sources behind on a bench top. This will be the perfect replacement as the corian we use is ideal to be used in most departments including a clean room department. The Corian can be used with all clean room cleaning agents and is seamless which eliminates dirt traps. The lead is fully enclosed within the Corian to ensure that this is the cleaniest the product can be.

Below are a couple of examples we have made which we think will give you the perfect starting point to design you very own Corian Bench Shield.

## CLEAN ROOM WASTE CONTAINER

Stainless steel waste container for disposing of used radioactive sources and/or needles.

The top is removable for the replacement of the disposable sharps container. The top is fitted with a flip lid to provide easy access to the sharp container.

The lid can be operated with the back of the hand to avoid possible contamination. The waste container is shielded with lead which is encapsulated in a seamless stainless steel body, this also allows efficient disinfection making it ideal for a clean room environment.

The stainless steel waste container comes in either 3mm, 6mm or 10mm lead shielding.

| Code | Description | Lead Thickness (mm) |
|---|---|---|
| 6BT-CRWC3 | Custom clean room waste container, 3mm lead shielding | 3 |
| 6BT-CRWC6 | Custom clean room waste container, 6mm lead shielding | 6 |
| 6BT-CRWC10 | Custom clean room waste container, 10mm lead shielding | 10 |

## CLEAN ROOM PEDAL BIN

The new stainless steel pedal bin has a seamless inner liner and outer case, lead capsulated inside the body to make this pedal bin ideal for a clean room environment.

The top lid is operated by a foot pedal and there is a removable lead lined inner lid with a central stainless steel plate fixed to the underside of the outer lid.

The shields are primarily for use with plastic sacks but can be adapted for use with most containers.

| Code | Description | Lead Thickness (mm) | Internal dimensions LxWxH (mm) | External dimensions LxWxH (mm) | Approximate weight (kg) |
|---|---|---|---|---|---|
| 6BT-CRPB27 | 27 Litre Pedal Bin | 6 | 260x260x400 | 530x300x600 | 64 |
| 6BT-CRPB40 | 40 Litre Pedal Bin | 6 | 260x260x600 | 530x300x800 | 76 |
| CUSTOM SIZES ARE AVAILABLE ON REQUEST | | | | | |

## STAINLESS STEEL SPLASH TRAYS

For added safety in the radiopharmacy or injection suite. Will contain spills and are easily decontaminated. Available in a range of dimensions.

| Code | Description |
|---|---|
| 14BT-SSTRAY | Stainless Steel Splash Tray, dimensions on request |

## RADIOPHARMACEUTICAL SYRINGE COLOUR CODED LABELS

13mm diameter coloured self adhesive discs labelled with an appropriate abbreviation for the radiopharmaceutical being used. Suitable for fixing to plunger top or barrel of syringe shield, vial or vial shield, etc. 500 labels per roll.

| Code | Description |
|---|---|
| 14212-001 | MDP colour-coded label |
| 14212-002 | MAA colour-coded label |
| 14212-003 | SC colour-coded label |
| 14212-004 | DTPA colour-coded label |
| 14212-005 | GH colour-coded label |
| 14212-006 | GH colour-coded label |
| 14212-007 | PYP colour-coded label |

| Code | Description |
|---|---|
| 14212-008 | Ga colour-coded label |
| 14212-009 | Tl colour-coded label |
| 14212-010 | HSA colour-coded label |
| 14212-011 | Unmarked white label |
| 14212-012 | HIDA colour-coded label |
| 14212-013 | HDP colour-coded label |
| 14212-014 | MIBI colour-coded label |
| 14212-015 | DMSA colour-coded label |
| 14212-016 | MAG3 colour-coded label |
| 14212-017 | I-131 colour-coded label |
| 14212-018 | DISIDA colour-coded label |
| 14212-019 | CARDIOLITE colour-coded label |
| 14212-020 | In111 colour-coded label |
| 14212-021 | Sr89 colour-coded label |
| 14212-022 | I123 colour-coded label |
| 14212-023 | CHOLETEC colour-coded label |
| 14212-025 | GLUCO colour-coded label |
| 14212-026 | TcRBC colour-coded label |
| 14212-027 | MYOVIEW colour-coded label |

## SYRINGE SHIELD LABELS

**MDP BONE SCAN**

Dose: _____ mCi Date: _____

Pt. Name: _____

**TL THALLIUM SCAN**

Dose: _____ mCi Date: _____

Pt. Name: _____

| Code | Description |
|---|---|
| 14212-200 | MDP Bone Scan |
| 14212-201 | HDP Bone Scan |
| 14212-202 | PVP Heart Scan |
| 14212-203 | TL Thallium Scan |
| 14212-204 | MAA Lung Scan |
| 14212-205 | DTPA Lung Aerosol |
| 14212-206 | S.C. Liver Scan |
| 14212-207 | MICROLITE Liver Scan |
| 14212-208 | DTPA Renal Scan |
| 14212-209 | GH Renal Scan |
| 14212-210 | I-131 Hippuran Renal |
| 14212-211 | HIDA Gall Bladder |
| 14212-212 | Choletec Gall Bladder |
| 14212-213 | Gallium Scan |
| 14212-214 | ..... Scan |

Fast acting radioactivity decontaminant formulated and manufactured by Atomic Products Corporation.

Designed to decontaminate the widest possible range of contaminants without affecting surfaces. It is non-alkaline, non-corrosive, biodegradable and germicidal. It optimally combines a number of chemical and physical principles causing it to act as a surface-wetting agent, sequestering agent, chelator, carrier, ion-exchanger, emulsifier, solvent, complexer, peptiser and detergent.

RADIACWASH contains no phosphates, chromates, silicates, enzymes, borates, aluminates, carbonates, halides or inert fillers which can interfere with sensitive analytical procedures.

Available in three different forms as detailed below:

## RADIACWASH – SINGLE GALLON BOTTLE

Concentrated solution which can be diluted with 5-40 parts water. It is used in the same manner as washing with soap or detergent. It can also be used in spray-mist applicators.

## RADIACWASH – SPRAY-MIST

Standard RADIACWASH solution in a special high pressure mist applicator. The pressure misting effect allows RADIACWASH to penetrate around and under contaminants and lift them off in solution.

## RADIACWASH – TOWELETTES

Individually packaged paper towels saturated in a special RADIACWASH solution, supplied in foil packets. Pleasant smelling, germicidal RADIACWASH Towelettes are safe on all surfaces and will not irritate the skin. Can be used for wipe tests.

| Code | Description |
|---|---|
| 15005-100 | RADIACWASH, 1 gallon (US) bottle |
| 15005-400 | RADIACWASH Spray-mist, 1 litre bottle with applicator |
| 15005-300 | RADIACWASH Towelettes, box of 100 |

## GENERATOR HOIST

### Technical Specifications

- Footprint area: 530mm x 740mm
- Overall height: 1600mm
- Distance between forks: 445mm
- Minimum lift height: 390mm (to underside boom arm)
- Maximum lift height: 1460mm (to underside boom arm)
- Lift height: 1070mm
- Lift rate: 1500mm/min.
- Boom arm extension: 400mm
- Wheels: 4 swivel, 2 rear locking
- Weight: T.B.A.

This hoist can also be customised to fit unique requirements.

| Code | Description |
|---|---|
| 15BT-GENHOIST | Generator hoist |

Our range of patient positioning and immobilisation products has been improved with a new DARTEX™ covering material. Dartex™ is WASHABLE and DRY CLEANABLE and is protected against attack by microfungi and bacteria.

All positioners come in a pleasant pastel green colour.

We are able to design and manufacture to individual customer requirements.

Please contact us for prices and details of our customer manufacturing service.

## NUCLEAR LATERAL SKULL IMMOBILISER

Complete with Velcro restraining strap. Coated finish.

| Code | Description |
|---|---|
| 16BT-411 | Right lateral skull immobiliser |
| 16BT-412 | Left lateral skull immobiliser |

## NUCLEAR AP HEAD IMMOBILISER

Complete with Velcro restraining strap. Coated finish.

| Code | Description |
|---|---|
| 16BT-409 | AP head immobiliser |

## CONTOURED LEG RESTS

Leg recesses for lateral support. Comfortable support during supine positioning. Coated finish.

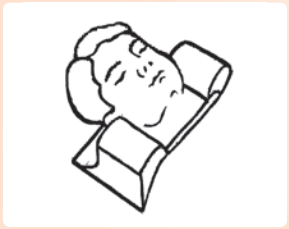
| Code | Description |
|---|---|
| 16BT-CLR05 | Contoured leg rest, 5" |
| 16BT-CLR07 | Contoured leg rest, 7" |
| 16BT-CLR10 | Contoured leg rest, 10" |
| 16BT-CLRSET | Set of 3 leg rests, 5, 7 & 10" |

## BASAL BLOCK 0 27"

For thyroid studies and special procedures. Coated finish.

| Code | Description |
|---|---|
| 16BT-101 | Basal block |

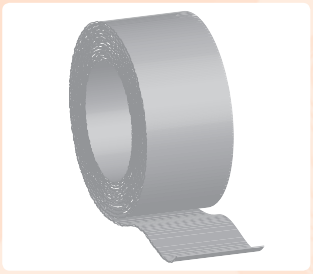
## HEAD & NECK REST



For skull work and special procedures. Coated finish.

| Code | Description |
|---|---|
| 16BT-119 | Head and neck rest |

## POLYNAP



This is a versatile positioning aid which facilitates comfortable patient restriction and general positioning on imaging tables, chairs and cardiac stress systems.

The padded strap material, a combination of urethane foam and napped nylon allows fastening along the entire length on both sides using a Velcro brand fastening. Available in two sizes, 2" wide and 6" wide.

| Code | Description |
|---|---|
| 16BT-2001 | Polynap, 6" wide, 15ft roll |
| 16BT-2044 | Polynap, 2" wide, 15ft roll |

## PATIENT ARM SUPPORT SYSTEM

Comfortable anatomically correct arm and shoulder support. Clinically proven design. Accommodates all patients. Applications in both diagnosis and therapy.

Coated upright cervical rest. Coated rounded bolster.

| Code | Description |
|---|---|
| 01-RM | compatible with single and dual head imaging systems |
| 16BT-PAS2 | compatible with triple head imaging systems |
| 16BT-104 | Cervical rest |
| 16BT-2356 | Bolster 10x5x2.5" |
| 16BT-2104 | Bolster 20x8x4" |

## THE HUGGER™ FOR PLANAR IMAGING

Bright Technologies now have available a range of immobilising aids for infants and young children. They are applicable in the fields of Nuclear Medicine, X-Ray, CT and ECT. All components are Non-Allergenic and can be readily cleaned or sterilised

All the materials in the make-up of the Hugger are radiolucent and show no trace of foreign artefacts or shadows. It is effective in all radiographic paediatric examinations. Those studied during development include skull series APs and laterals, flat upright and lateral abdomen and chest, all crosstable work, all extremities and "frog-leg" hips.

The entire unit is component in nature and individual parts may be purchased when necessary.

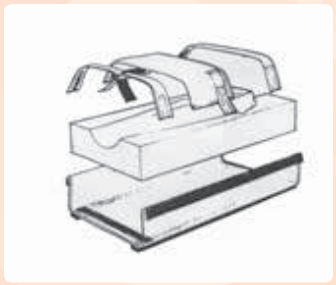
The foam insert and restraining straps are easily removed for cleaning and/or sterilisation and tests have shown that machine washing is the best method. All straps fasten to the rigid Plexiglas base which holds the techni-foam insert using Velcro fasteners. The base has rounded corners and top edges for safety. Laminated to the underside of the Plexiglas base are two non-slip foam strips to eliminate any movement of the unit in relation to the film and table. The techni-foam insert has the proper anatomical design to achieve a womb-like warmth and security where it hugs rather than confines, an effect which pacifies the infant resulting in maximum co-operation.

The Techni-foam insert is lightweight and soft textured. It has innate thermal characteristics absorbing and retaining body heat to keep the infant comfortable. The restraining straps are made from a strong, durable foam and nylon combination and are located so as not to interfere with the examination. The straps are soft and flexible and will not mar the patient. The Velcro fasteners on the base keep the straps in place. The Hugger is available in two sizes, one for premature born and newborn infants up to 3 months (CFI-425) and the other for children of age 4 months to 3 years (CFI-4426).

Overall dimensions of the CFI-425 are 510 x 230 x 80mm.

Overall dimensions of the CFI-426 are 760 x 305 x 105mm.

| Code | Description |
|---|---|
| 16CFI-425 | Infant Hugger (complete) |
| 16CFI-425A | Foam insert |
| 16CFI-425B | Base |
| 16CFI-425C | Head restraint |
| 16CFI-425D | Body wrap |
| 16CFI-425E | Leg straps |
| 16CFI-426 | Child Hugger (complete) |
| 16CFI-426A | Foam insert |
| 16CFI-426B | Base |
| 16CFI-426C | Head restraint |
| 16CFI-426D | Body wrap |
| 16CFI-426E | Leg straps |

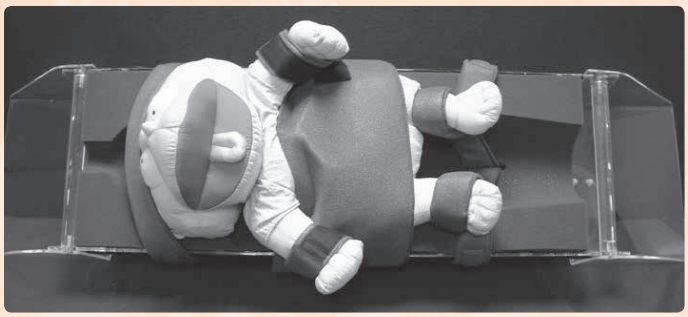


## THE HUGGER™ FOR TOMOGRAPHIC IMAGING

Incorporates all the immobilisation concepts of the Planar Hugger but has a radiused base to allow closer imaging and reduced possibility of artefacts. The Plexiglas trough is supported by Plexiglas brackets which hold it upright and prevent tipping but do not interfere with imaging. Aluminium equivalency <1.5mm. Total weight 5.5Kg.

The Tomo-Hugger, contains two inserts, one child size and the other infant size, with one set of universal restraining straps.

| Code | Description |
|---|---|
| 16CFI-200 CT | Hugger (complete) |
| 16CFI-200A1 | Foam insert, infant |
| 16CFI-200A2 | Foam insert, child |
| 16CFI-200B | Base |
| 16CFI-200C | Head restraint |
| 16CFI-200D | Body wrap |
| 16CFI-200E | Leg straps |



## PAEDIATRIC NUCLEAR MEDICINE IMAGING CHAIR

Urinary tract infections are very common in children. To detect renal damage a DMSA scan is carried out on children following there first infection. For diagnostic purposes the quality of the collected images is of paramount importance.

This chair will hold a child comfortably and securely during a scan to enable accurate data collection.

Designed by the staff at Royal Victoria Infirmary, Newcastle and developed into a production version by Bright Technologies Ltd. this chair has been on trial for 2-3 years providing many benefits for both patient and operator.

| Code | Description |
|---|---|
| 16BT-PAEDIATCHAIR | Paediatric Imaging Chair |

## PAEDIATRIC X-RAY CHAIR

The X-ray Chair has been designed specifically for paediatric chest x-ray purposes. The many operational features of this chair facilitate positioning for x-ray imaging.

**Features:**

- Individual locking castors to allow precision movement.
- Adjustable front and side bolsters designed for single hand use.
- Adjustable x-ray plate holder.
- Removeable cushions which can be cleaned with Atichlor.
- Head cushion to protect the child's head.
- Cushions and bolsters fire retardent.
- Tilt tested up to 20 degree's.
- Minimal seams to comply with infection control.
- CE Marked 'Medical Device Directive 93/42/EEC'.
- Non-rust and light weight materials used.
- Height = 1300mm | Width = 660mm | Depth = 600mm.
- Seat Height = 815mm | Weight = 33Kg.
- Max Load = 40 Kg.

| Code | Description |
|---|---|
| 19BT-PAED/X | Paediatric X-ray Chair |

## SCINTIMAMMOGRAPHY MATTRESS

New specially contoured mattress which enables mammography procedures to be readily performed on gamma cameras. Its unique design allows the patient to be scanned in the prone position on any SPECT or planar imaging table.

- Patients can be positioned on the mattress to allow full extension of a breast
- The mattress is readily cleaned
- Mattress thickness is 150mm.

### Comprising

1 x Large Mattress (Blue)

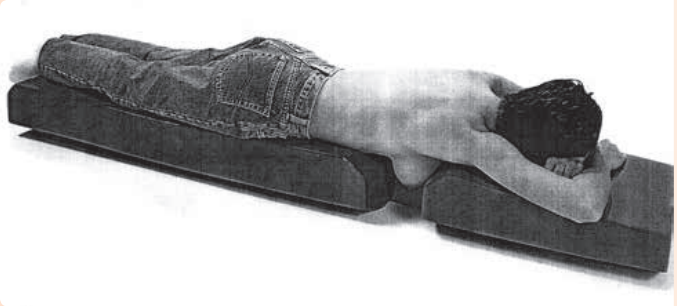
1 x Short Mattress (Blue)

1 x Shielded Breast Wedge (Red)

1 x Unshielded Breast Wedge (Blue)

### Cleaning & Maintenance

Wipe clean only with mild detergent or aqueous disinfectan



| Code | Description |
|---|---|
| 16MAMMOMAT | Scintimammography Mattress |

## GENERAL PURPOSE IMAGING CHAIR

Designed specifically for Nuclear Medicine procedures, the chair combines patient comfort with convenience to the operator.

Angled H-frame base, overall dimensions 700mm x 635mm, enabling it to be taken through standard doorways. Chair mounted on high quality lockable castors with a ground clearance of 180mm.

Seat rotates through 360° on precision thrust bearings, with rotation controlled by a quick release clamp operating onto a gearwheel for positive location and long life.

Seat lateral movement of 230mm along a linear track bearing with locking lever which can be operated either by hand or foot. Standard seat height of 610mm. Arms and back drop down for lateral or posterior access and spring loaded catches combine rapid release with positive relocation. Back rest can be inclined at a fixed angle of 20° as well as the vertical position.

The imaging chair now comes with the neck support and footrests as standard.

| Code | Description |
|---|---|
| 19BT-ICNF | Imaging chair with neck support and footrests |

## HEIGHT ADJUSTABLE IMAGING CHAIR

- Designed for all radiological imaging procedures. The chair combines patient comfort with convenience to the operator.
- Angled H frame base can be taken through standard doorways.
- Independent lockable castors.
- Seat rotation of 360° and lockable in 120 positions.
- Lateral seat movement along a linear track bearing with a foot operated locking lever.
- Spring loaded catches allow the arms and back to be dropped down for lateral and posterior access.
- Backrest can be vertical or inclined to 20 degrees.
- Foot rest and neck support are included as standard.
- Height adjustment by rechargeable battery operated actuator.

| Code | Description |
|---|---|
| 19BT-ICHA | Height Adjustable Imaging Chair |

## VEENSTRA WHOLE BODY XYZ TABLE

This table allows gamma camera heads to rotate both underneath and over the table with no protrusions which could interfere with camera use.

It incorporates the following features:

- Precision linear bearings on X (280mm movement) and Y (1420mm movement) axis. Height adjustment, table top, from 755mm to 985mm with easy to use locks.
- Large locking castors allow easy movement.
- 6mm clear polycarbonate top.
- Maximum patient weight 25 stone.
- Easy to clean mattress.

| Code | Description |
|---|---|
| 20BT-XYZ203 | Whole body XYZ imaging table, with mattress |

## BRIGHT TECHNOLOGIES CARDIAC STRESS SYSTEM

New design of cardiac stress system from Bright Technologies.

**Main Features:**

- Designed for ease of use by both patients and clinicians.
- The low level seat has unhindered access which is especially useful for less mobile patients.
- The fully programmable ergometer is adjustable for both height and reach allowing a wide range of patients to be exercise stress tested.
- The back rest and ergometer height are both gas spring assisted to allow easy and precise adjustments.
- The back folds flat and the leg supports pull out should emergency CPR be required.
- After use the Cardiac Stress System separates into two sections to allow easier manoeuvrability and storage.
- The whole Cardiac Stress System moves through a standard hospital doorway.

Dimensions 2460x635x1320mm

Total weight of both sections 170kg

| Code | Description |
|---|---|
| 21BT-CSS1 | Bri-Tec cardiac stress system |

## FILLABLE POINT SOURCE MARKERS

Small clear plastic receptacle, 25mm diameter x 13mm thick with a central channel to contain radionuclide. Fitted with a nylon screw plug with O-ring seal for a tight safe seal.

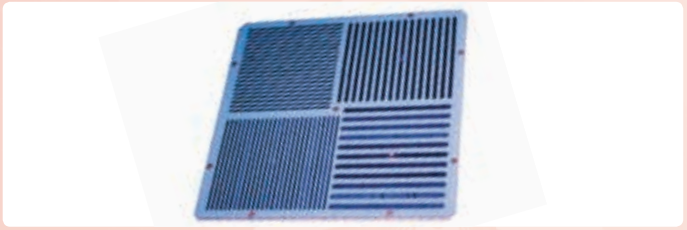
Easily filled with the same radionuclide being used in an imaging procedure.

Supplied in sets of 4.

| Code | Description |
|---|---|
| 16BT-FPSM | Fillable point source marker, set of 4 |

## BAR PHANTOMS

Determines resolution of scintillation cameras. Bar Phantoms offer precise determination of camera intrinsic resolution, collimator spatial resolution, field size and linearity. We offer a range of sizes manufactured to the highest quality standards.



| Code | Description | Dimensions (LxWxH) | Lead bar widths | Field across bar configurations (LxW) | Shipping weight |
|---|---|---|---|---|---|
| 22BT243-935 | Rectangular Bar Phantom | 56.5x43.2x1.27cm<br>22.25x17x0.5" | 2, 2.5, 3 & 3.5mm<br>.079, .098, .118 & .138" | 53.3x40.5cm<br>21x15.9" | 10kg<br>21lb |
| 22BT243-975 | Triple Head Rectangular Bar Phantom | 28x45.7x1.27cm<br>11x18x0.5" | 2, 2.5, 3 & 3.5mm<br>.079, .098, .118 & .138" | 25.4x43.2cm<br>10x17" | 8.7kg<br>19lb |
| 22BT243-850 | Standard Bar Phantom | 43x43x1.27cm<br>16.875x16.875x0.5" | 6.4, 4.8, 4 & 9.5mm<br>.25, 187, .156, & .375" | 40.3x40.3cm<br>15.875x15.875" | 6kg<br>14lb |
| 22BT243-950 | E-CAM Bar Phantom (4-Quadrant Phantom) | 41x55x1.27cm<br>16x21.5x0.5" | 2, 2.5, 3 & 3.5mm<br>.079, .098, .118 & .138" | 51.6x37.8cm<br>20.3x14.875" | 8.7kg<br>19lb |
| 22BT243-800 | Standard High Resolution Bar Phantom | 43x43x1.28cm<br>16.875x16.875x0.5" | 6.4, 4.8, 4 & 3.2mm<br>.25, .187, .156, & .125" | 40.3x40.3cm<br>15.875x15.875" | 6kg<br>14lb |
| 22BT243-CBP | Cardiac Bar Phantom | 39.4x23.5x1.27cm<br>15.5x9.25x0.5" | 2, 2.5, 3 & 3.5mm<br>.079, .098, .118 & .138" | 36.8x21cm<br>14.5x8.25" | 6.8kg<br>15lb |

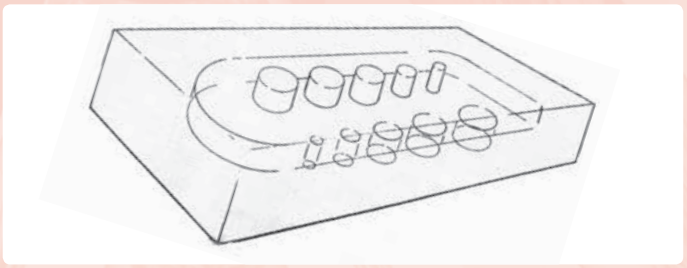
E-CAM Bar Phantom (4-Quadrant Phantom) includes two removable screw knobs for insertion/removal of phantom from camera head.

## WILLIAMS LIVER PHANTOM

Flood phantom source containing a row of five "hot" and a row of five "cold" defects. Overall size: 205x105mm

Inner corners of the phantom are rounded with different radii.

Defect diameters are 15mm, 10mm, 6mm, 4mm and 3mm with decreasing distances separating them – 34mm, 26mm, 25mm and 22mm, centre to centre.



| Code | Description |
|---|---|
| 22WLP | Williams Liver Phantom |

## STANDARD THYROID UPTAKE NECK PHANTOM

This phantom is composed of a solid 127mm high x 127mm diameter acrylate cylinder which contains a 101mm deep x 51mm diameter cavity plus a source vial and an acrylate carrier.

Both carrier and cylinder have scribe lines for proper alignment during use. The phantom comes with twelve 30ml capacity source vials. To prepare a liquid standard commercially available iodine capsules can be dissolved directly in the source vials. A special acrylate capsule holder is supplied to enable the user to count the capsules directly without having to dissolve them.

Cylinder has one flat surface to prevent rolling when horizontal.

| Code | Description |
|---|---|
| 22043-365 | Standard Thyroid Uptake Neck Phantom |

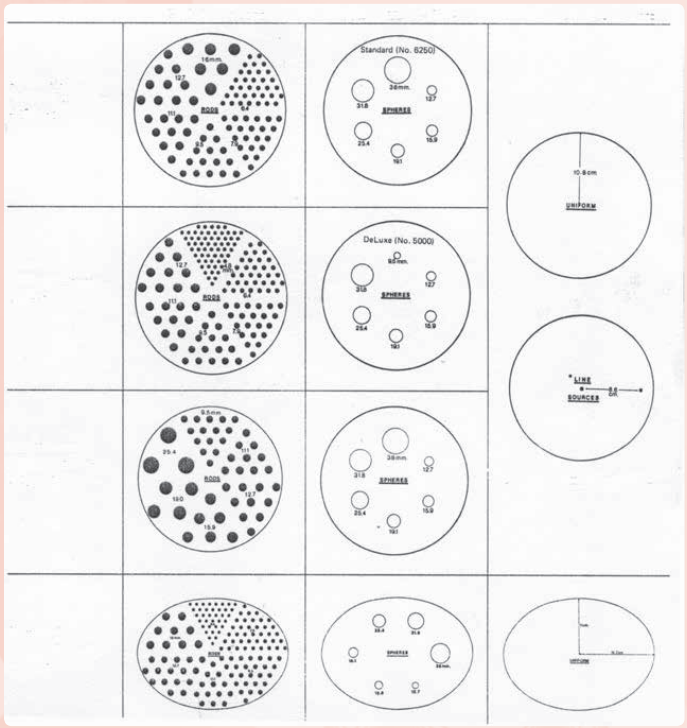
## DATA SPECTRUM SPECT PHANTOMS

Data Spectrum is the world's leading supplier of high quality SPECT phantoms and offers the widest range of inserts for the effective evaluation of multiple performance characteristics of any ECT camera, whether it is a SPECT or positron system.

The basic systems consist of an acrylic source tank containing six sets of solid rods in a pie arrangement with six solid spheres mounted on rods above. The inserts are removable and other optional inserts can be fitted.

On-axis and off-axis transverse line spread functions may be easily measured without the necessity of removing the cover plate. Hence measurements of full-width-half (or tenth) maximum can be easily determined, either in air or water.

Three models available: the Deluxe model for high quality SPECT cameras; the Standard Model for lower resolution systems and the Elliptical Model for non-circular or elliptical SPECT orbits.




| Code | Description |
|---|---|
| 22043-750 | Deluxe SPECT phantom. Rod diameters: 4.8 – 12.7mm<br>Sphere diameters: 12.7 – 38.1mm |
| 22043-762 | Standard SPECT phantom. Rod diameters: 6.4 – 15.9mm<br>Sphere diameters: 12.7 – 38.1mm |
| 22043-770 | Benchmark SPECT phantom. Rod diameters: 9.5 – 25.4mm<br>Sphere diameters: 12.7 – 38.1mm |
| 22043-722 | Elliptical SPECT phantom. Rod diameters: 6.4 – 15.9mm<br>Sphere diameters: 12.7 – 38.1mm |
| Optional inserts | |
| 22043-730 | Triple line insert. Centre of rotation error evaluation. |
| 22043-763 | Hollow spheres. Set of six precision hollow spheres which can be filled individually<br>Diameters of 9.9 – 31.2mm |
| 22043-761 | Micro Hollow spheres. Set of three precision hollow spheres.<br>Volume: 100, 200 and 300 microlitres. 3.9 – 7.8mm |
| 22043-751 | Hot Spot insert. Six sets of hollow channels<br>Diameters of 4.8 – 12.7mm |
| 22043-777 | Cardiac insert. Provides multi-function simulation of the left ventricle and can be used to evaluate SPECT imaging of cold defects within the "myocardium". Supplied with hot and cold defects |

22043-762

22043-730

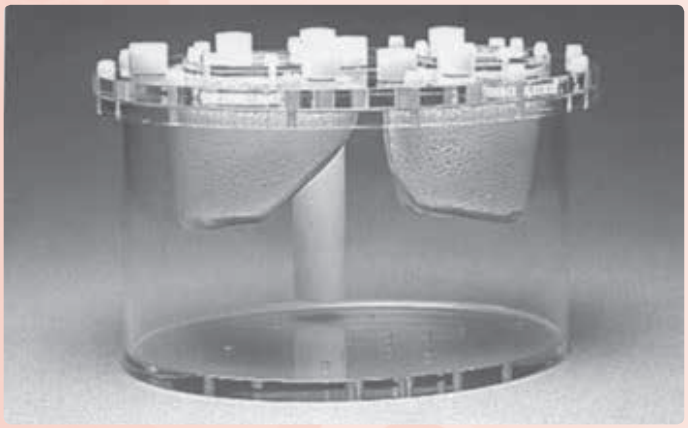
22043-763

## DATA SPECTRUM LUNG PHANTOM

The lung phantom consists of two chambers that are shaped to simulate lungs. These chambers are filled with material which mimics the lung tissue. When the lung chambers are packed with styrofoam beads and filled with a radioactive solution, they simulate lung tissues with a density of circa 0.3g/cm$^3$ and with any radioactive concentration desired.

The lung phantoms can also be used with the DATA SPECTRUM Cardiac Insert to simulate realistically the attenuation coefficients of, and radioactive uptake, in various tissues in the human upper torso. This makes it ideal for evaluating cardiac SPECT imaging methods including reconstruction algorithms and non-uniform attenuation compensation techniques for improved image quality and quantitative accuracy.

| Code | Description |
|---|---|
| 22043-740 | Data Spectrum lung phantom with elliptical cylinder |
| 22043-777 | Cardiac insert |



## DATA SPECTRUM ANTHROPOMORPHIC TORSO PHANTOM

Used primarily for the evaluation of non-uniform attenuation and scatter compensation methods.

Phantom includes a large body-shaped cylinder with lung, liver and spine inserts.

When used with the optional cardiac insert, cardiac ECT data acquisition and reconstruction methods may be evaluated.

Size: 380x260mm.

Weight: 8.6kg.

The phantom simulates the anatomical structures of radioactivity distributions for the upper torso of average to large male/female patients.

| Code | Description |
|---|---|
| 22043-795 | Anthropomorphic Torso Phantom |
| 22043-796 | Anthropomorphic Breast Phantom |
| 22043-777 | Cardiac insert |

## DATA SPECTRUM 3D HOFFMAN BRAIN PHANTOM

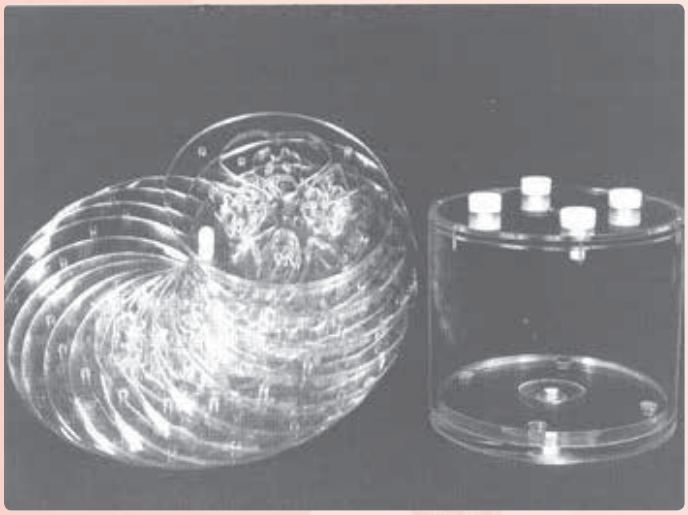
The phantom gives the anatomically accurate three dimensional simulation of the radioisotope distribution found in the normal brain. It allows qualitative and quantitative studies to be performed on the effects of scatter and attenuation for both SPECT and PET techniques.

The phantom simulates the 4:1 uptake ratio in the grey and white matter respectively which is normally seen in these studies. The ventricles, which are normally void of radioactivity are also present.

The phantom has nineteen independent plates stacked into a cylindrical tank. The user can add custom defects to simulate clinical abnormalities.

Tank size: 210mm diameter x 180mm high.

Fillable volume: 1150ml.



| Code | Description |
|---|---|
| 22043-790 | Data Spectrum 3D Hoffman Brain Phantom |

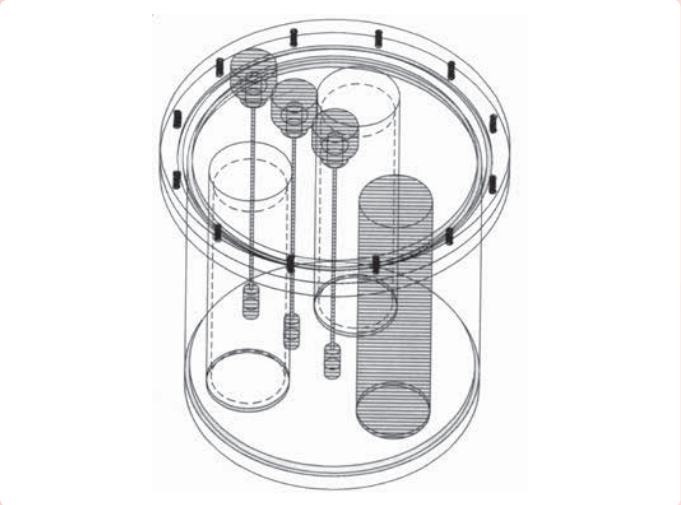
## DATA SPECTRUM NEMA PET PHANTOM

Provides a standard set of performance measurements for Positron Emission Tomography (PET). Measurements include tests for spatial resolution, scatter fraction, sensitivity, count rate losses and randoms, uniformity, scatter correction, attenuation correction and count rate linearity correction.

There are three removable cylindrically shaped inserts, two are fillable and the third is solid Teflon. Three stainless steel line source measurements can be inserted and removed through the lid. Glass capillary tubing can be used as an alternative.

The set of measurements has been developed jointly by the Society of Nuclear Medicine and the National Electrical Manufacturers Association.

Size: 199mm diameter x 184mm high

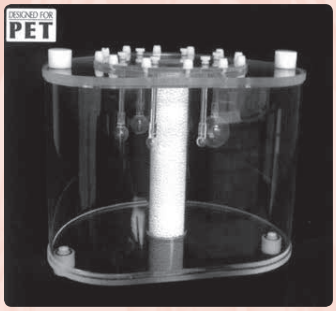


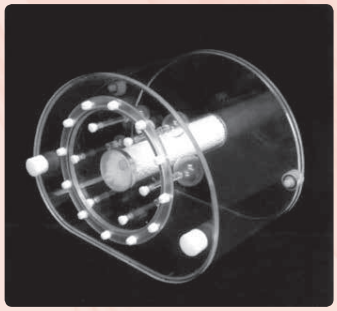
| Code | Description |
|---|---|
| 22043-755 | Data Spectrum NEMA PET Phantom |

## DATA SPECTRUM NEMA 2007/IEC 2008 PET PHANTOM

2000 NEMA Standards, ideal for whole-body PET

- Complies with NEMA 2007/IEC 2008 standards
- Simulation of whole-body imaging using PET and camera-based coincidence imaging techniques
- Evaluation of reconstructed image quality in whole-body PET and camera-based coinciden imaging
- Determination of the coincidence count rate characteristics in brain and cardiac imaging
- Evaluation of the relationship between true coincidence count rate and radioactivity
- Determination of the address errors caused by address pile-up
- Evaluation of the count loss correction scheme



| Code | Description |
|---|---|
| 22043-767 | Phantom, PET, NEMA 2007/IEC 2008 |

## NEW PET-CT PHANTOM

The PET-CT Phantom™ includes internal structures (three rods and six spheres) which, when imaged with both modalities, can demonstrate how accurately the two image sets are aligned. In addition, a single sample of radioactive water is attenuated by water, bone and CT contrast material (as well as air only) to determine how accurately the CT-based PET attenuation correction works.

The Phantom is used for:

- Acceptance testing of PET/CT and SPECT/CT systems
- Routine quality evaluation of PET/CT and SPECT/CT systems
- Evaluation of new image fusion software
- Evaluation of new attenuation correction algorithms
- Aluminium tubes are for registration
- The outer 2" OD micro cylinder is for comparing attenuation region to non attenuation region
- The 6" ring is for contrast solution
- Research

**Specifications:**

| | |
|---|---|
| Main Cylinder: | |
| Interior length of phantom: | 180mm |
| Fillable spheres (5) inner diameter: | 10, 13, 17, 22 and 28mm |
| Distance from sphere plane to inside wall: | 70mm |
| Volume of empty cylinder: | 9.7 litres |
| Main Cylindrical insert dimension: | Outside diameter: 51mm, Length: 180mm |
| Top Cylinder: | Cylinder outside diameter: ~5.1cm, Cylinder inside diameter: ~4.cm, Cylinder inside height: ~8.2cm, Cylinder outside height: ~12.0cm, Volume of empty cylinder: 408cm$^2$ |
| Three Aluminium Tubes: | One 5 inch long: ~1.7cc, Two 7 inch (ea): ~ 2.5cc |
| Stepped Bone Ring: | Pre-filled with liquid bone composition, not to be opened. |
| The volumes for the bone ring are: | Outer volume: 15.6 cu. inch: ~256cc, Inner volume: 6.7 cu. inch: ~110cc |

| Code | Description |
|---|---|
| 22043-771 | Phantom, PET/CT |

## PET SCATTER PHANTOM – NEMA

Complies with NEMA 2007 Standard

Acceptance testing

Determine the imaging systems relative sensitivity to scatter radiation

Measure the effects of dead-time and the effects of random events generated at different levels of activity of the line source

Cylinder Outside Dimension: 20.3cm dia x 70cm long

Cylinder Hole Size: 6.4mm

Cylinder Hole Offset: 4.5cm

Line Source Dimensions: 5mm O.D. x 80cm long

Line Source Inside Diameter: 3.2mm

Shipping Weight: 52lb (23.5kg)

| Code | Description |
|---|---|
| 22043-768 | Phantom, PET Scatter, NEMA 2007 |

## PET SENSITIVITY PHANTOM – NEMA

Complies with NEMA 2007 Standard

Ideal for PET camera sensitivity

Five internally stacked concentric aluminium tubes – all 700mm in length.

1st Tube
– Inside Diameter: 3.9mm
– Outside Diameter: 6.4mm

2nd Tube
– Inside Diameter: 7.0mm
– Outside Diameter: 9.5mm

3rd Tube
– Inside Diameter: 10.2mm
– Outside Diameter: 12.7mm

4th Tube
– Inside Diameter: 13.4mm
– Outside Diameter: 15.9mm

5th Tube
– Inside Diameter: 16.6mm
– Outside Diameter: 19.1mm

6th Innermost Tube (a fillable polyethylene tube)
– Inside Diameter: 1mm
– Outside Diameter: 3mmShipping Weight: 3lb (1.3kg)

| Code | Description |
|---|---|
| 22043-769 | Phantom, PET Sensitivity, NEMA 2007 |

# EuroProbe3

## THE ULTIMATE CONCEPT FOR RADIOGUIDED SURGERY

With a single Readout Module and 9 gamma probe options, the EUROPROBE 3 is a unique system fulfilling all the needs of per-operative and percutaneous detection within 7 major clinical fields.

EuroMedical INSTRUMENTS

## CLINICAL APPLICATIONS

BREAST CANCER
- Sentinel node biopsy
- In-clinic lesions detection ("ROLL", "SNOLL")

GYNAECOLOGY
- Laparoscopic detection of sentinel node in cancer of the cervix and endometrium
- Sentinel node detection of vulva cancer

PLASTIC SURGERY
- Melanoma

HEAD & NECK
- Oral cavity
- Oropharynx (validation on process)

ENDOCRINOLOGY
- Thyroid
- Parathyroid

NUCLEAR MEDICINE
- Percutaneous detection
- Localisation of gamma labelled areas

UROLOGY
- Penile cancer

## THE READOUT MODULE

### MAIN FEATURES

- Automatic setting (for Tc99)
- Mains electric powered
- Automatic probe identification
- Direct reading
- Large display of 5 digits
- PC port
- 2 sound modes BIP or FM
- 9 Customized configurations storage
- Foot Switch (optional)

### TECHNICAL SPECIFICATIONS

- Maximum count: 15000cps
- Operating temperature range: +15° to +40°C
- Height: 245mm
- Width/Depth: 233/270mm
- Weight: 2kg
- Power consumption: Maximum 15W
- Operating power: 115/220VAC F=50Hz
- Conformity with CEI 60601-1-2
- EEC: EC 0459 class 2 a
- USA: FDA Registered No. 9032627
- CANADA: Licenced No. 61985 CSA on process

## THE PROBES

| Type of probe* | Reference | Detector | Diameter Length | Energy Isotope | Shape Reading | Additional Collimator available |
|---|---|---|---|---|---|---|
| | | | | | | |
| SMALL | SOE 311 | CdTe 5x5x3mm Tellurure Cadmium | 11mm L: 175mm | 20 – 300KeV Tc 99, I 125 | ANGLED AXIAL | YES |
| | | | | | | |
| LARGE high sensitivity | SOE 316-7 | CsI (Tl) Crystal 5x10mm coupled to a 25mm photodiode | 16mm L: 184mm | 100KeV – 1 Mev Tc 99, I 131, FDG | ANGLED AXIAL | YES |
| | | | | | | |
| COELIOSCOPIQUE | SOE 311-AF | CdTe 5x5x3mm Tellurure Cadmium | 10mm L: 266.5mm | 20 – 300KeV Tc 99 | STRAIGHT AXIAL | NO |
| | | | | | | |
| COELIOSCOPIQUE | SOE 311-AL | CdTe 5x5x3mm Tellurure Cadmium | 10mm L: 266.5mm | 20 – 300KeV Tc 99 | STRAIGHT LATERAL | NO |
| * All probes are waterproof and have integrated collimator (tungsten) | | | | | | |

## SETTING UP IN 3 STEPS

1. REAR PANEL
Connect the power cable

2. FRONT PANEL
Connect the probe(s) before switching on.
Automatic probe identification.

3. SWITCH ON
Press the button.
Automatically selects Tc 99 m

ADJUSTMENTS DURING OPERATION

Isotope: Press for selecting isotope

Counting time: Press for selecting the counting time

Integration time: Press for selecting the integration time

Select configuration: Press for selecting (No. 0 by default)

Sound: Press to select (BIP or FM)

SOUND VOLUME
Press the button and turn to adjust the sound volume

SENSITIVITY SCALE
Turn the button without pressing

## THE BLUETOOTH® PROBE

EuroProbe3

THE WIRELESS ALTERNATIVE FOR RADIOGUIDED SURGERY

USER INTERFACE

1. Connect the Europrobe 3 Display to the Power Supply
2. Switch on the Display, the Bluetooth® Logo will illuminate
3. Turn on the Bluetooth® Probe, by pressing the on/off switch on the handle. The right hand side LED will briefly illuminate orange then go off. At this time the left hand side LED will illuminate Blue indicating there is radio communication with the Display
4. The Blue LED, left hand side, will flash intermittently when data is being exchanged with the Display
5. If the Bluetooth® probe is not used for several minutes the probe will go into stand-by mode. To reactivate please go to 3 and start up the probe.

| Parameters | Specifications |
|---|---|
| Detector | Detector Crystal:CsI 10mm long x 5mm diameter coupled to a 25mm² silicon photodiode |
| Energy Range | 100KeV to 1 MeV (Tc-99m, In-111, I-131, F18) |
| Probe Dimensions | Probe Length 261mm Diameter 11mm |
| Collimation | The collimator is integrated in the probe |
| Weight | 200g |
| Protection IP | IP64 |
| Probe Battery | Pile Li-SOCL2 1/2AA 3,6V SAFT LS 14250 |
| Wireless connection | Module Bluetooth® ID: ES9LMX9838 |
| Decontamination | By Immersion, ONLY AFTER THE BATTERY HAS BEEN REMOVED |

## STERILE PROBE COVERS

Sterile probe covers for use with the Europrobe system. These are supplied in boxes of 20 sterile probe covers per box.

| Code | Description |
|---|---|
| 23BT-PC3688 | Sterile probe covers (20 per box) |

## RADIOTHERAPY INSTALLATIONS

Bright Technologies is able to produce and install a variety of shielded enclosures, shielding systems and room panelling to customer specifications.

## RADIOTHERAPY INSTALLATIONS

# RADIOTHERAPY POSITIONERS

Our range of patient positioning and immobilisation products has been improved with a new DARTEX™ covering material. Dartex™ is WASHABLE and DRY CLEANABLE and is protected against attack by microfungi and bacteria.

All positioners come in a pleasant pastel green colour.

We are able to design and manufacture to individual customer requirements.

Please contact us for prices and details of our customer manufacturing service.

## NUCLEAR LATERAL SKULL IMMOBILISER

Complete with Velcro restraining strap. Coated finish.

| Code | Description |
|---|---|
| 16BT-411 | Right lateral skull immobiliser |
| 16BT-412 | Left lateral skull immobiliser |

## NUCLEAR AP HEAD IMMOBILISER

Complete with Velcro restraining strap. Coated finish.

| Code | Description |
|---|---|
| 16BT-409 | AP head immobiliser |

## CONTOURED LEG RESTS

Leg recesses for lateral support. Comfortable support during supine positioning. Coated finish.

| Code | Description |
|---|---|
| 16BT-CLR05 | Contoured leg rest, 5" |
| 16BT-CLR07 | Contoured leg rest, 7" |
| 16BT-CLR10 | Contoured leg rest, 10" |
| 16BT-CLRSET | Set of 3 leg rests, 5, 7 & 10" |

## BASAL BLOCK 0 27"

For thyroid studies and special procedures. Coated finish.

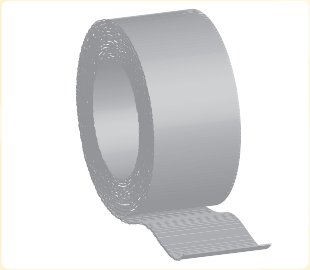
| Code | Description |
|---|---|
| 16BT-101 | Basal block |

## HEAD & NECK REST

For skull work and special procedures. Coated finish.

| Code | Description |
|---|---|
| 16BT-119 | Head and neck rest |

## POLYNAP



This is a versatile positioning aid which facilitates comfortable patient restriction and general positioning on imaging tables, chairs and cardiac stress systems.

The padded strap material, a combination of urethane foam and napped nylon allows fastening along the entire length on both sides using a Velcro brand fastening. Available in two sizes, 2" wide and 6" wide.

| Code | Description |
|---|---|
| 16BT-2001 | Polynap, 6" wide, 15ft roll |
| 16BT-2044 | Polynap, 2" wide, 15ft roll |

## PATIENT ARM SUPPORT SYSTEM

Comfortable anatomically correct arm and shoulder support. Clinically proven design. Accommodates all patients. Applications in both diagnosis and therapy.

Coated upright cervical rest. Coated rounded bolster.

| Code | Description |
|---|---|
| 01-RM | compatible with single and dual head imaging systems |
| 16BT-PAS2 | compatible with triple head imaging systems |
| 16BT-104 | Cervical rest |
| 16BT-2356 | Bolster 10x5x2.5" |
| 16BT-2104 | Bolster 20x8x4" |

# EXAMPLES OF CUSTOMISED POSITIONERS SHOWN BELOW

## LATERAL LEG BLOCK/CROSS TABLE

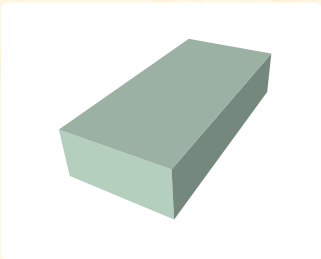
Allows positioning for comparative leg studies. Coated finish.

## WEDGES

A variety of wedges are now available with different sizes and angles. All wedges are covered.

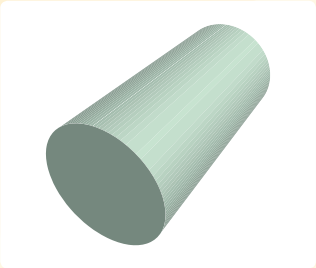
Examples are given below but we can custom manufacture any size or shape:

## RECTANGULAR BLOCKS



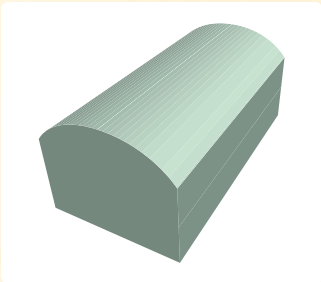
Choice of sizes. All blocks are coated.

## CYLINDERS



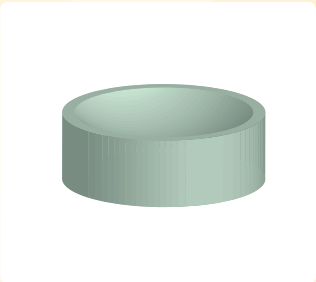
Coated finish.

## CERVICAL RESTS & BOLSTERS



Coated upright cervical rest.
Coated rounded bolster.

## HEAD DISC



Coated finish.

## BRIGHT TECHNOLOGIES CUSTOM DESIGN & MANUFACTURE

Bright Technologies have a 3,500 square foot design and machine workshop. If you have items which you wish us to make as "one-offs" or other products that you believe have a wider market then please call us. This service has become increasingly popular due to the growth of discerning users who require products which meet their specific need but who are also trying to keep within strict budgets. The term customised often deters people because the believe that such equipment will be very expensive, this is often not the case. Often what one person requires is exactly what many others also require. Your ideas therefore may be of benefit to not only yourself but to many others.

## BRIGHT TECHNOLOGIES CUSTOM DESIGN & MANUFACTURE

# NOTES

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