Brachytherapy QA

Oncology Imaging Systems

HDR 1000 Plus

An industry standard for independently verifying prescribed patient dose.

CONFIDENCE IN BRACHYTHERAPY SOURCE CALIBRATION

The HDR 1000 Plus Well Chamber is an air-communicating chamber, so there is no inaccuracy due to an undetected gas leak as in a pressurized chamber. The HDR 1000 Plus is ideal for low dose rate and high dose rate brachytherapy. Source holders are available for most existing sources.

HDR 1000 PLUS WELL CHAMBER

International Acclaim

- HDR 1000 Plus has been performance validated in more than 50 scientific presentations and is used by Primary and Secondary Radiation Standards Laboratories throughout the world

Assurance is Confidence

- Precise and accurate calibration of HDR and LDR Iridium, Iodine, Palladium, Cesium, and Strontium brachytherapy source activities. Calibrates individual and multiple sources.

Wide Range of Uses

- Outstanding versatility, use one chamber for many isotopes
- Source holders available for most existing sources Including: Cesium, Iridium, HDR Iridium, LDR Iridium, Iridium Wire, Iodine, Palladium

HDR 1000 PLUS WELL CHAMBER (REF 90008) SPECIFICATIONS

ADCL CALIBRATIONS HDR ^{192}Ir and/or LDR radionuclides from various manufacturers as requested

ACTIVE VOLUME 245 cm^3

CONNECTOR Two lug triax BNC (standard)
TNC, Type M, or BNC + Banana (optional)

RANGE 10 U to 80 MU 0.01 mCi to 20 Ci

CABLE 3 ft, 1 m

BIAS VOLTAGE ± 300 volts, typical

LEAKAGE Less than 50 fA

STABILITY 0.2% (Reproducibility over 2 years)

RESPONSE ± 0.5% over 25 mm at center of axis

SENSITIVITY

SOURCE	Current to Air Kerma Strength (U=1uGym^2/h)	Current to Apparent Activity
HDR Iridium:	2.1 pA/U	8.6 nA/Ci
Cesium:	2.0 pA/U	5.6 nA/Ci
LDR Iridium:	2.3 pA/U	9.1 nA/Ci
Iodine:	4.3 pA/U	5.4 nA/Ci
Palladium:	2.1 pA/U	2.4 nA/Ci

A_{ion} 0.9996, typical

ACCESSORIES Case (REF 50004)
Wall mount accessory (REF 70007)
(5) Interlocking 1" lead rings (REF 70125)
Carrying case for any Comprehensive Calibration System (REF 70012)

DIMENSIONS *Height:* 6.1 in, 15.6 cm *Insert Diameter:* 1.4 in, 3.5 cm
Diameter: 4 in, 10.2 cm *Insert Height:* 4.8 in, 12.1 cm
Weight: 6.1 lbs, 2.7 kg

Specifications subject to change without notice.

IVB 1000

An industry standard for independently verifying prescribed patient dose.

CONFIDENCE IN BRACHYTHERAPY SOURCE CALIBRATION

The IVB 1000 Well Chamber can be used for intravascular, HDR and LDR brachytherapy. It is similar to the HDR 1000 Plus but has an active length which is four times longer, making it ideal for long source trains.

IVB 1000 WELL CHAMBER

Superior Functionality

- An exceptionally long 100 mm sweet spot, unmatched in other chambers, accommodates long source trains and wires
- Calibrates individual and multiple isotopes
- Outstanding versatility, use one chamber for many isotopes
- Source holders available for most existing sources

Assurance is Confidence

- Satisfies NRC requirements and TG-60 quality assurance requirements for IVB source strength verification
- Precise and accurate calibration of HDR and LDR Iridium, Iodine, Palladium, Cesium, and Strontium brachytherapy source activities

IVB 1000 WELL CHAMBER (REF 90009) SPECIFICATIONS

ACTIVE VOLUME	475 cm^3
CONNECTOR	Two lug triax BNC (standard) TNC, Type M, or BNC + Banana (optional)
RANGE	10 U to 80 MU 0.01 mCi to 20 Ci
CABLE	3 ft, 1 m
BIAS VOLTAGE	± 300 volts, typical
LEAKAGE	Less than 50 fA
STABILITY	0.2% (Reproducibility over 2 years)
RESPONSE	± 0.3% over 100 mm at center of axis, typical

SENSITIVITY

SOURCE	Current to Air Kerma Strength ($U=1uGym^2/h$)	Current to Apparent Activity
HDR Iridium:	2.2 pA/U	9.0 nA/Ci
Cesium:	2.1 pA/U	5.9 nA/Ci
LDR Iridium:	2.4 pA/U	9.5 nA/Ci
Iodine:	4.3 pA/U	5.5 nA/Ci
Palladium:	2.3 pA/U	2.6 nA/Ci

Approx. 38.5 nA/Gy/s for $^{90}Sr/^{90}Y$

ACCESSORIES	Case (REF 50026) included (4) Interlocking 1" lead rings (REF 70025) Carrying case for Comprehensive Calibration System (REF 70012)
DIMENSIONS	*Height:* 10.2 in, 25.9 cm *Insert Diameter:* 1.4 in, 3.5 cm *Diameter:* 4 in, 10.2 cm *Insert Height:* 8.8 in, 22.4 cm *Weight:* 8.0 lbs, 3.6 kg

Specifications subject to change without notice.

Brachytherapy Source Holders

A full line of source calibration equipment for high-dose rate, low-dose rate and intravascular brachytherapy.

HDR 1000 Plus Well Chamber

IVB 1000 Well Chamber

SOURCE HOLDER PRODUCT MATRIX

Source Holder	HDR REF	IVB REF	Isotope	ADCL Calibration available
HDR ^{192}Ir Sources	70010	70044	HDR ^{192}Ir	Yes
HDR ^{192}Ir Quality Assurance Tool	70008		HDR ^{192}Ir	No
BEBIG ^{60}Co and ^{192}Ir Afterloader	70110		^{60}Co, HDR ^{192}Ir	SSDL
^{137}Cs Sources [5mm]	70020	70045	^{137}Cs	Yes
^{137}Cs Remote Afterloading Sources [7.1mm]	70003	70046	^{137}Cs	Yes
Nucletron microSelectron HDR Sources	72280		^{125}I	Yes
Leipzig Applicator	70031	70031	HDR ^{192}Ir	No
Syringe Holders	70026	70026	Metastron, ^{89}Sr, ^{153}Sm, ^{131}I, ^{223}Ra	No
Preloaded Needle Sources		70051	^{125}I, ^{103}Pd	No
RAPID Strand® Iodine Seed Sources	70023	70048	^{125}I	No
Nucletron selectSeed™ Sources	70030		^{125}I	Yes
Single LDR Seed Sources	70016	70043	^{192}Ir, ^{125}I, ^{103}Pd, ^{131}Cs	Yes
^{192}Ir Pin	70095		^{192}Ir	Yes
Seed Batch Assay Tool	70022		^{125}I, ^{103}Pd	No
LDR ^{192}Ir Sources	70009		LDR ^{192}Ir	Yes
Mick® Cartridge Sources	70024	70047	^{125}I, ^{103}Pd	No
Bard QuickLink/MICK	72307		^{125}I, ^{103}Pd	No
Xoft Electronic Brachytherapy	70088		Electronic	Yes

NOTE: One source holder may have several calibrations associated with it. For example, a source holder for Single LDR Seeds (REF 70016 and 70043) may have calibrations for iodine, palladium and LDR iridium.

Iridium 192 Source Holders

The most complete line of source holders for calibrating high and low dose rate iridium, palladium and iodine isotopes

HDR IRIDIUM SOURCES

The high dose rate iridium source holder has a rubber O-ring that prevents catheter movement. Calibration is easy, requiring a fraction of the time of thimble ion chamber techniques.

HDR REF 70010
IVB REF 70044

HDR Ir-192 QUALITY ASSURANCE TOOL

The HDR 192Ir Quality Assurance Tool performs crucial tests of 192Ir sources including source positioning within 0.3 mm, timer accuracy, and consistency of source activity.

HDR REF 70008

LDR IRIDIUM SOURCES

The LDR iridium source holder for the HDR 1000 Plus Well Chamber features a 3 mm diameter acrylic tube which extends from the top of the insert to the most active area of the HDR 1000 Plus Well Chamber. It makes one loop at the active area and extends back to the top of the insert. A collective calibration of the entire ribbon of seeds is obtained. Fourteen iridium seeds spaced one centimeter center to center fit into the active area.

The LDR Iridium source holder for the IVB 1000 Well Chamber centers a source train in the active area of the IVB 1000 Well Chamber for measurement. Source holder collar is adjusted to accommodate the number of seeds in the source to be measured. Collar is adjustable to measure 6, 10, 14 18 or 22 seeds.

HDR REF 70009
IVB REF 70034

BEBIG Co-60 and Ir-192 AFTERLOADER

For use with the BEBIG Remote Afterloader source catheters. The source holder is calibrated at the factory.

HDR REF 70110

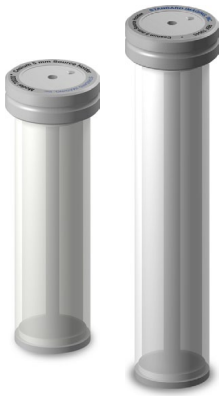
Cesium Source Holders

The most complete line of source holders for calibrating cesium isotopes

CESIUM SOURCE HOLDERS

Commonly used with manually loaded cesium sources, this source holder has a 5.0 mm diameter opening. A spacer within the source holder positions the cesium insert at the most active area of the chamber. The spacer for positioning the cesium source is removable so the insert can also be used with longer cesium sources and larger HDR 192Ir catheters.

HDR REF 70020
IVB REF 70045



CESIUM REMOTE AFTER-LOADING SOURCES

Designed for use with LDR remote after-loading treatment systems, this source holder has a 7.1mm diameter opening. There is no spacer because the after-loading system positions the source. This insert can also be used with cobalt sources used in some LDR remote after-loading treatment systems.

HDR REF 70003
IVB REF 70046

Leipzig Applicator Source Holder

The Leipzig Applicator Source Holder facilitates fast, routine output verification of the six Leipzig Applicators

LEIPZIG APPLICATOR SOURCE HOLDER

The Leipzig Applicator Source Holder, when used with the Standard Imaging HDR 1000 Plus Well Chamber and an HDR Iridium Source Holder with an ADCL calibration, creates a complete calibration system for measuring the output of the six Leipzig Applicators prior to clinical use. No additional equipment is needed to verify output measurements with published correlation factors.

HDR REF 70031
IVB REF 70031

Iodine & Palladium Source Holders

The most complete line of source holders for calibrating iodine and palladium isotopes

SINGLE LDR SEED SOURCES

The single LDR seed source holder features a 1.2 mm inner diameter tube which positions an individual iodine, palladium, iridium or gold seed at the most sensitive area of the well chamber.

HDR REF 70016
IVB REF 70043

SEED BATCH ASSAY TOOL

The seed batch assay tool is designed to provide multiple seed measurements for up to 500 of the iodine or palladium seeds typically used for prostate cancer treatment. Source holder positions seeds at the most sensitive area of the HDR 1000 Plus Well Chamber.

HDR REF 70022

PRELOADED NEEDLE SOURCES

Allows calibration and visual verification of a sterilized needle filled with seeds and spacers. A universal luer lock mates to the needle through an adjustable needle hub to needle opening interface offering seamless integration from seeds to the needle. Source trains of one to ten seeds may be verified and calibrated while maintaining sterility.

IVB REF 70051

RAPID STRAND® IODINE SEED SOURCES

The RAPID Strand iodine seed source holder provides a fast and convenient method to perform a quality assurance measurement of the I-125 RAPID Strand under sterile conditions.

HDR REF 70023
IVB REF 70048

MICK® CARTRIDGE SOURCES

The Mick Cartridge source holder provides a consistency QA check of the activity of seeds loaded into a Mick cartridge. Source holder positions the cartridge for a quick, reproducible measurement. Spring loaded clamp attachment quickly grips cartridge to minimise finger dose. (Mick Cartridge source holder) can also be used with the Oncura Sterile Convenience Pack.

HDR REF 70024
IVB REF 70047

NUCLETRON SELECTSEED™ SOURCES

Source holder connects to the Nucletron seedSelectron® to center a source in the active area of the HDR 1000 Plus Well Chamber for measurement.

HDR REF 70030
IVB REF 70034

Beta Emitter Source Holders

The most complete line of tools for calibrating 90Sr/90Y, Metastron and Samarium isotopes

SYRINGE HOLDERS

The syringe holder provides a quick and convenient QA measurement of METASTRON® 89Sr, 153Sm, and 131I vials and most liquids in a 5 cc or 10 cc syringe. Syringe Holder REF 70026 includes one 5 cc syringe and one 10 cc syringe.

HDR REF 70026
IVB REF 70026

90SR/90Y IVB SOURCES

90Sr/90Y IVB source holder centers the source in the active area of the IVB 1000 Well Chamber for measurement. The collar is adjustable for sources of 30, 40 and 60 mm lengths. Source holder accommodates both 3.5 and 5.0 mm French catheters.

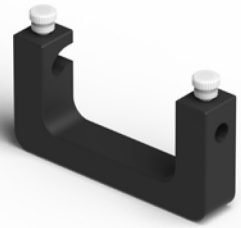
IVB REF 70036

Superficial Chamber Holders

Securely position the Exradin A20 end-window parallel plate ionization chamber for accurate measurements with various types of surface applicators.

VARIAN SURFACE APPLICATOR FIXTURE

Chamber and applicator holder accommodates both the horizontal and vertical type solid conical surface applicators available from Varian.



XOFT SURFACE APPLICATOR FIXTURE

Chamber and applicator holder secures the ion chamber in the center of the surface applicators available from Xoft (an iCAD subsidiary).

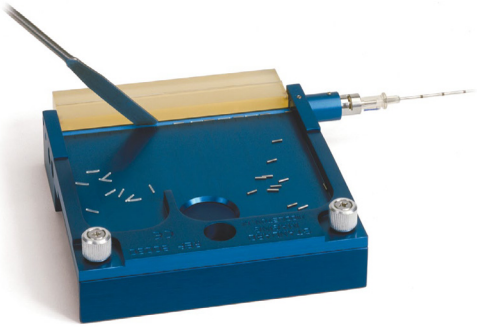
ELEKTA ESTEYA SURFACE APPLICATOR FIXTURE

Chamber and applicator holder accommodates the Esetya treatment nozzle and surface applicators and ensures that the A20 chamber is positioned in the center of each applicator cap.

Needle Loading Instruments

SEED SLIDER

The Seed Slider is specifically designed to be the most efficient instrument for loading seeds and spacers into prostate implant needles. Clinicians align the seeds and spacers into a slot per treatment prescription and encapsulate the seeds and spacers using a cover. The needles lock onto one side of the Seed Slider with a Luer-Lok® and a needle stylet is inserted to smoothly push the seeds and spacers into the treatment needle. The Seed Slider when used with the Seed Sterilization and Sorting Tray can be sterilized together saving time and effort.



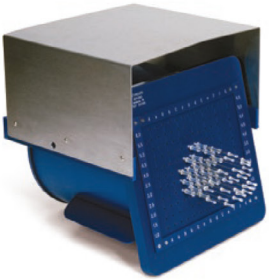
SEEDVAC™

SeedVac™ is a vacuum driven instrument designed to pull prostate implant seeds and spacers into a clear tube tip. Seeds are drawn into the tube tip by placing a finger over the hole on the hand piece to create a vacuum. The prescribed sequence of seeds and spacers is visually verified in the tube tip before being placed into the needle. Seeds and spacers are then placed into an implant needle simply by lifting the finger off of the hole. A circular brass shield near the end of the hand piece provides radiation protection to the hand during the loading procedure. Components can be steam sterilized between each use.

Shielding Instruments

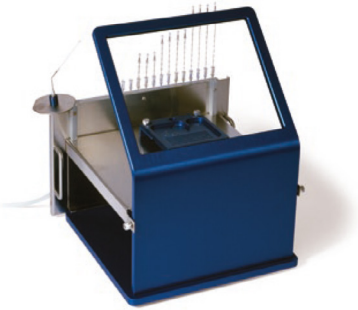
NEEDLE CRADLE

The Needle Cradle consists of eleven rows and thirteen columns for holding loaded low dose rate prostate implant needles. A light weight, stainless steel needle guard slips over the needle cradle shielding clinicians from radiation exposure and prevents bumping of needle stylets.



NEEDLE LOADING PLATFORM

- Provides a convenient work station for loading, counting and handling seeds.
- Ergonomic design brings work up to a comfortable, seated level.



NEEDLE LOADING SHIELD

The Needle Loading Shield protects clinicians from radiation exposure while loading prostate implant needles with iodine or palladium seeds.

- 22 HVL of protection for iodine seeds.
- For 100 iodine seeds at 0.4 mCi, exposure behind the glass is reduced to 6.4 x 10-15 R/h.
- For 100 iodine seeds at 1.0 mCi, exposure behind the glass is reduced to 1.6 x 10-14 R/h.
- Also available as a component of the Needle Loading Platform.

LEAD SEED POUCH KIT

The Protective Lead Seed Pouch Kit is a simple yet effective way to address seed handling issues and patient concerns following LDR brachytherapy treatment. The kit provides supplies for radioactive seed collection, a plastic vial and a 0.2 mm lead equivalent lined pouch for transporting.

Seed Sterilization Instruments

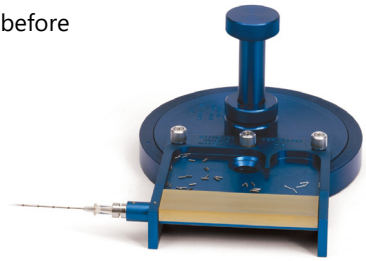
SEED STERILIZATION PILL BOX

The Seed Sterilization Pill Box is helps sterilize a large number of iodine or palladium seeds at one time. Solid construction assures stability and maximum shielding during handling. Rounded corners keep seeds positioned for easy removal.

SEED STERILIZATION & SORTING TRAY

The Seed Sterilization and Sorting Tray allow clinicians to sort seeds into ten separate wells according to source strength. Each well is stamped with a number for identification and can easily hold 10 to 20 seeds.

- Before and after seed sterilization the loading cover islocked down over the wells to shield clinicians from radiation.
- During use, seeds from only that well are exposed while being loaded into the treatment system.
- One typical drying cycle completely dries the seeds before the tray is removed from the autoclave



Seed Handling Instruments

SEED ALIGNMENT TRAY

The Seed Alignment Tray is used with the SeedVac™ to conveniently load LDR brachytherapy needles and reduce radiation exposure to clinicians. The Seed Alignment Tray can be used alone or fitted to the Seed Sterilization and Sorting Tray.

STANDARD IMAGING®

OIS is the distributor for Standard Imaging in the UK & Ireland.

DOCUMENT NO. BR38 / REV 2202 | For the latest information, please visit our website.

OIS
Oncology Imaging Systems

+44 (0) 1825 840633
sales@oncologyimaging.com
www.oncologyimaging.com