

MultiSource®

For a higher standard in brachytherapy



Multiple Applications

MultiSource® is a HDR afterloader, especially developed for safe and accurate intraluminal, interstitial, intracavitary, intra-operative and surface mould treatments. A complete range of applicators, catheters, needles and templates is available. MultiSource® can be equipped with an Iridium-192 source or with a Cobalt-60 source, as the customer wishes.

Miniaturised Co-60 Source

IBt Bebig's expertise in the manufacturing of sealed sources has resulted in a miniaturised high activity Co-60 source, which has the same size as a conventional Ir-192 source. Both sources can be used for the same applications and deliver equivalent treatment results.

Lower Operating Costs with Co-60

IBt Bebig's Co-60 source is particularly cost-efficient: Just one source exchange every 5 years of operation is required, compared to 20 source exchanges for Ir-192 in the same period. This results in a significant reduction of operating costs including source exchanges, transport and formalities.

The MultiSource® HDR afterloader system is designed for the entire range of HDR brachytherapy applications using a Co-60 or an Ir-192 source.

Integrated Calibration System

An integrated fixed length path guarantees precise calibration of the source transportation system.

Source position accuracy can be verified with the provided camera. The data is automatically incorporated into the software.

Channel Coding

MultiSource® channels, transfer tubes and applicator tubes are colour coded, enabling the user to perform cervix applications with a minimised risk of confusing the channels.

Automatic Length Verification

MultiSource® automatically measures the length of every applicator, catheter or needle. This feature guarantees precise treatment and ensures that only the preselected applicator is used for the treatment.

Integrated Dosimetry System

IBt Bebig offers an optional In-Vivo Dosimetry system which is fully integrated into MultiSource®. This built-in system saves space and makes handling more comfortable. The MultiSource® software directly controls the dosimetry system and permits the specification of dose limits and the display of rectum and bladder doses.

40 Channel Support

The 40 Channel Support permits the complete range of HDR applications. For applications that require more than 20 channels, the treatment will be performed in two consecutive steps which are executed in a single sequence and recorded in the patient chart as one session.

Co-60 Source Characteristics

- Co-60 sources introduced by Henschke as early as 1960
- Proven clinical results – equivalent treatment results to the standard Ir-192
- Miniaturised sources for entire range of brachytherapy treatments
- Predictable treatment times due to long half-life
- Tested per ISO 2919 – classification C65444
- Anisotropic and radial function fitting tested as per PTB standards
- Anisotropic characteristics better than with Ir-192

Control Unit Features

- Data import from external brachytherapy planning system via network or storage medium
- Automatic adjustment of treatment time based on current source activity
- Control and monitoring of entire treatment process
- Programming and editing of source movement
- Synchronisation of electronic timers in control and treatment unit
- Recording and exporting of treatment data
- Support of max. 100 dwell points for treatment length of 600 mm and minimum stepping distance of 1 mm
- User-friendly software
- Authorisation management for safer use

Technical Data

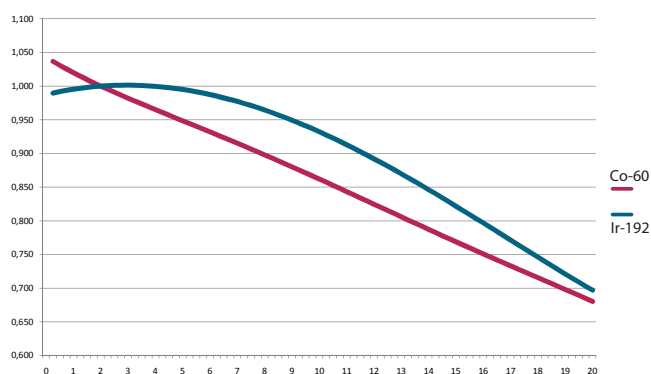
Main Unit	
Dimensions (W x D x H)	722 x 562 x 980–1280 mm
Weight	Co-60/Ir-192 version 270 kg Ir-192 version 170 kg
Standing surface / Base plate	0.41 m ²
Voltage range	95–135 V / 190–264 V, 1/N/PE, 47–63 Hz
Power	460 VA
Recommended fuse value	16 A, characteristic C
Classification	Class I, Type B equipment according to IEC 601-2-17

Working Environment

Temperature	10 to 40 °C / 50 to 110 °F
Relative air humidity	30–75 %
Air pressure	70 kPa–110 kPa

Safety Features

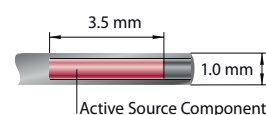
- Integrated calibration system for easy and accurate daily verification
- Automatic Length Verification for precise measurement of applicator length
- Battery backup system for safe source retraction in the event of a power failure
- Hand crank for power independent, emergency source retraction
- Two different monitoring systems for treatment time and source position



Radial Dose Rate Function



Integrated dosimetry system during application



Miniaturised Co-60 Source

Radiation Facts

Radiation Shielding IEC 601-2-17	Dose rate in 1 m distance for Co-60 < 0.01 mSv/h for Ir-192 < 0.001 mSv/h
Radioactive Sources	74 GBq Co-60 and 370 GBq Ir-192
Active Source Component	Ø 0.6 x 3.5 mm Co-60 and Ø 0.6 x 3.5 mm Ir-192

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