

# MultiSource®

## Cost Efficient Brachytherapy Solution



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

### ■ Application

MultiSource® is a 20 channel afterloader, which has been specially developed for safe, accurate and cost efficient intraluminal, interstitial, intracavitary, intra-operative and surface mould treatments. A complete range of applicators, catheters, needles and templates is available for the MultiSource®.

### ■ Miniaturised Co-60 Source

BEBIG's proven expertise in the manufacturing of sealed sources has resulted in a miniaturised high activity Co-60 source, which is the same size

as a conventional Ir-192 source. A miniaturised Co-60 afterloader source can be used for equivalent applications and delivers equivalent treatment results as the standard Ir-192, but at a lower operating cost per treatment.

### ■ Lower Operating Costs

MultiSource® was developed to provide the clinic with a very cost efficient solution. Hence MultiSource® is equipped with a Co-60 source. Alternatively it can be equipped with an Ir-192 source. Due to the long half life of Co-60, operational costs are reduced to approximately one fifth of a conventional Ir-192 HDR afterloading system. Just one source exchange per 10 years of operation is usually required, compared to 35 to 40 source exchanges with conventional Ir-192. This results in a significant reduction in expenses for sources, transport, service and patient treatment.

### ■ Universal Catheter System

The unique Universal Catheter System is an enclosed catheter, which is inserted directly into the applicators. This solution provides a very easy applicator connection and guarantees a safe and fast emergency procedure, which does not require removing the applicator from the patient.

### ■ Integrated Calibration System

An integrated fixed length test path guarantees a precise calibration of the source transportation system. In addition, source position accuracy can be independently verified with the integrated camera.

### ■ Automatic Length Verification

MultiSource® measures every applicator, catheter and needle length automatically. This unique feature reduces treatment time while guaranteeing precision treatment by eliminating manual measurements.



**BEBIG**

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## ■ Treatment Console Features

- Data import from external brachytherapy planning system via network or floppy disk
- Automatic adjustment of treatment time based on current source strength
- Control and monitoring of entire treatment process
- Programming and editing of source movement
- Synchronisation of electronic timers in treatment console and main unit
- Recording and exporting of treatment data
- On screen help functions
- Support of max. 100 dwell points for treatment length of 600 mm and minimum stepping distance of 1 mm

## ■ Co-60 Source Characteristics

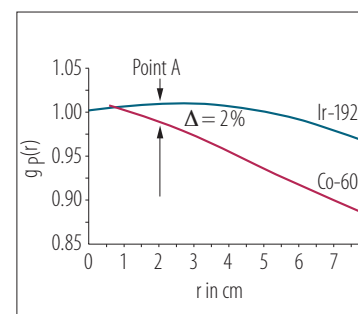
- Proven clinical results – Co-60 sources introduced by Henschke already in 1960
- Miniaturised sources for entire range of brachytherapy treatments
- Guarantees predictable treatment times due to long half life
- Tested per ISO 2919-80 – classification C65444
- Anisotropic and radial function fitting tested as per PTB standards

## ■ Safety Features

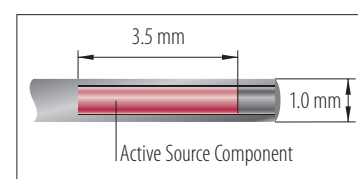
- Universal Catheter System for safe and convenient treatment
- Integrated calibration system for easy and accurate daily verification
- Battery backup system for safe source retraction in the event of a power failure
- Hand crank for power independent, emergency source retraction
- Two different monitoring systems for treatment time and source position
- Tungsten alloy safe designed for Co-60 and Ir-192

## ■ Technical Data

<b>Main Unit</b>	
Dimensions (WxDxH)	710 x 668 x 1010–1310 mm
Weight	270 kg
Standing surface / Base plate	0,47 m <sup>2</sup>
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
<b>Working Environment</b>	
Temperature	10 to 40 °C / 50 to 110 °F
Relative air humidity	30–75 %
Air pressure	70 kPa–110 kPa
<b>Radiation Shielding IEC 601-2-17</b>	
Dose rate in 1 m distance for Co-60	< 0.01 mSv/h
Dose rate in 1 m distance for Ir-192	< 0.001 mSv/h
<b>Radioactive Sources</b>	
74 GBq Co-60 and 370 GBq Ir-192	
<b>Active Source Component</b>	
∅ 0,6 x 3,5 mm Co-60 and ∅ 0,6 x 3,5 mm Ir-192	



Radial Dose Rate Function



Miniaturised Co-60 Source



Universal Catheter System

**BEBIG Isotopen- und  
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