

MultiSource® HDR Afterloader

Product Information



The new BEBIG MultiSource® remote controlled afterloader is designed for high dose rate brachytherapy with Co-60 or Ir-192 sources.

■ Application

The 20 channel MultiSource® with its miniaturised stepping source is fully equipped for precise and safe delivering of high dose rate (HDR) brachytherapy to the entire range of irradiation treatments. A large variety of applicators, catheters and needles are available for intraluminal, interstitial, intracavitary, intra-operative and surface treatments.

Many years of clinical brachytherapy experience is BEBIG's foundation for a wide spectrum of accessories including HDRplus®, a very user-friendly treatment planning software.

■ Low Running Costs

The MultiSource® is uniquely available for Ir-192 and Co-60 sources. Especially today cost efficiency becomes more and more important and with the long half life of Co-60 the running costs can be reduced dramatically. During one decade of operation only a single source exchange is usually required compared to 35 source exchanges of a conventional HDR system.

■ Automatic Length Verification

The MultiSource® measures every applicator, catheter and needle length automatically. In contrast to other systems this unique feature enables the user to omit the time consuming manual measurement of the catheter in use.

■ Integrated Calibration System

An integrated test path with a fixed length guarantees a precise daily calibration of the transportation system. This separate calibration system performs 100% positioning accuracy irrespective of the applicator length. In addition, verifying of the positioning accuracy can be done independently with an integrated camera system which displays on the control panel.



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■ Safety Functions

- The MultiSource® comes with a storage container designed for Co-60
- The source will be automatically retracted as soon as the door to the operating theatre opens
- An internal battery ensures a safe source retraction in the event of a hospital power failure
- An additional emergency retraction system is available as backup, in case of a transportation system failure
- A hand crank is provided as a second, power independent, emergency source retraction system
- Two different monitoring systems control treatment time and source position

■ Treatment Control Panel Features

- Import of treatment data from external planning systems via floppy disk or network
- The MultiSource® control software automatically adjusts treatment time based on the source strength
- Transfer of planning data to the main unit
- Independent verification of irradiation data from the main unit with own calculation
- Requests and displays status information from the main unit
- Starts, continues and interrupts planned treatment
- Synchronisation of electronic timers in control panel and main unit
- Recording of the entire treatment data
- Export of treatment data for post planning
- On screen help display function
- Programming and editing of source movement sequences
- Max.100 dwell points are supported for a treatment length of 600 mm and a minimum stepping distance of 1 mm.

■ Technical Data

Main Unit	
Dimensions (W x D x H)	710 x 668 x 1010–1310 mm
Weight	270 kg
Standing surface / Base plate	0,47 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
Radiation Shielding IEC 601-2-17	
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
Radioactive Sources	
74 GBq Co-60 and 370 GBq Ir-192	

■ Channel Switch

The channel switch can connect up to 20 applicators to the source transportation system.

A light barrier indicates the existence and the correct connection of the applicator.

■ Drive Unit for Check Dummy and Source

A precise treatment requires a precise source positioning.

The MultiSource® monitors the actual source positioning by using separate incremental encoders and light barriers for the source park and start position. The repeatability of the source transportation system is ± 0.5 mm.

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