

Mobile Radiographic Units



JOLLY
PLUS

JOLLY DR
PLUS

Intended use

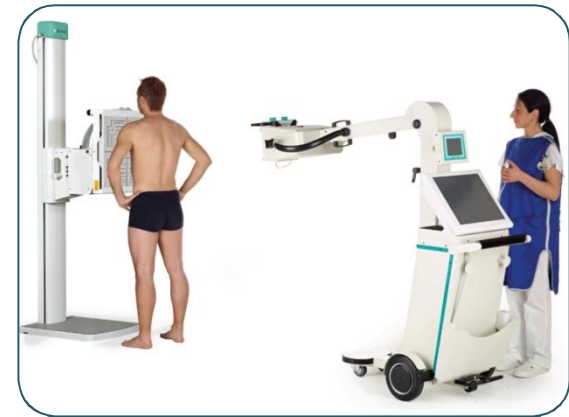
Mobile radiographic units are used for radiographic imaging of patients who cannot be moved to the radiology department and who are in areas — such as intensive and critical care units or operating and emergency rooms — that lack standard, fixed radiographic equipment.



Motionless patients



Operating and emergency room



Smart solution for any routine work

Power supply

Max power consumption 3,5 kW

No dedicated line needed.



Description	Value
Main power supply	Standard: <ul style="list-style-type: none">• Voltage: 230 Vac single phase• Frequency: 50 /60 Hz• Current consumption: 16 A maximum Optional: <ul style="list-style-type: none">• Voltage: 115 Vac single phase• Frequency: 60 Hz• Current consumption: 25 A maximum
Line compensation	± 10% automatic

Easy to move and position

Balanced and articulated arm suitable for any kind of projection.



Simple Fast Smart.

Simple to use

Fast image acquisition

Smartly designed unit



Wide configurations range

6 different powers available

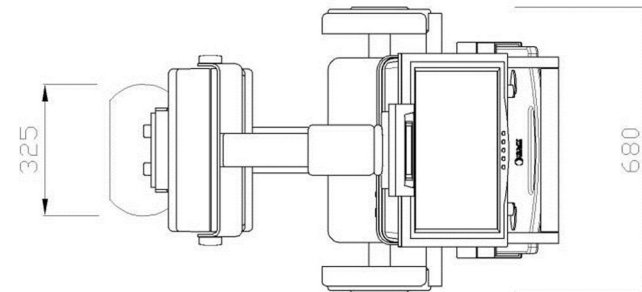
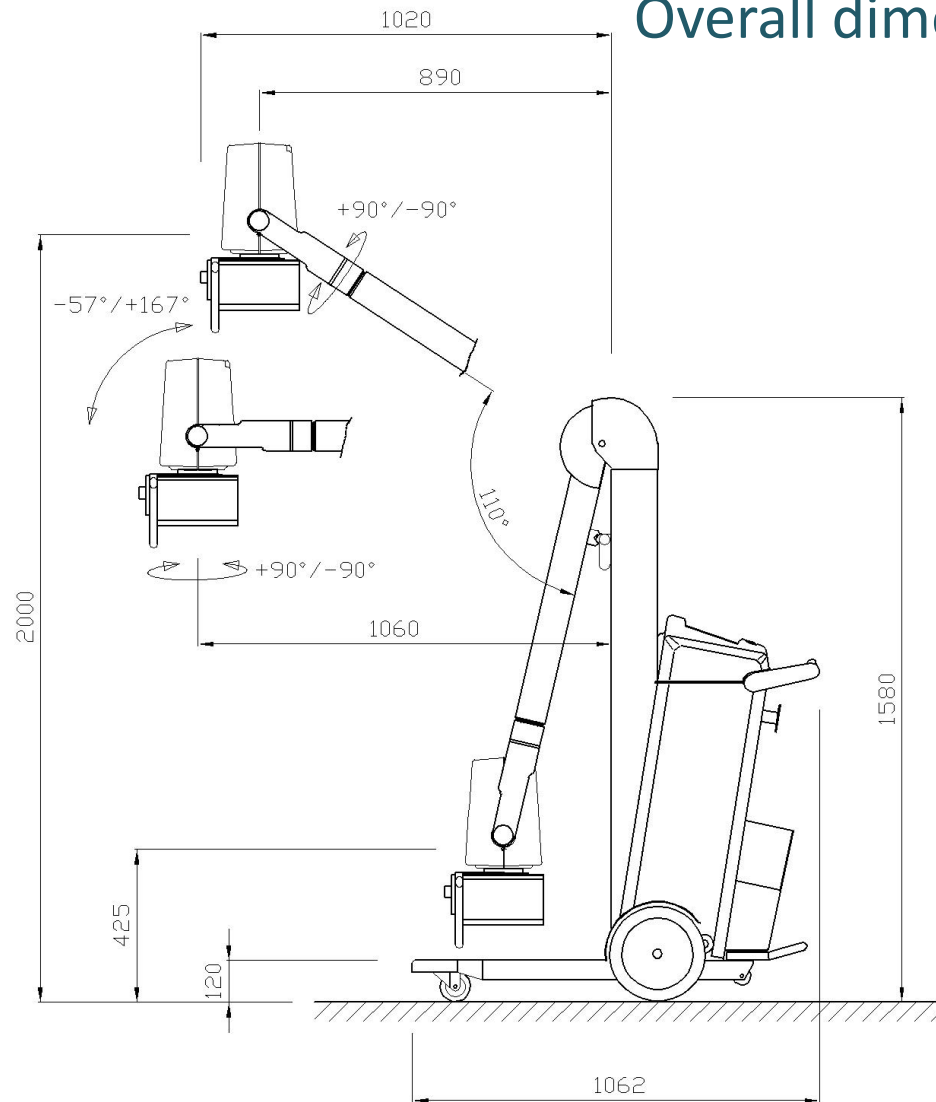


Tube type	Power
Stationary anode	4 kW
	6 kW
Rotating anode	15 kW
	16 kW
	20 kW
	30 kW
	30 kW DR



Light and compact unit

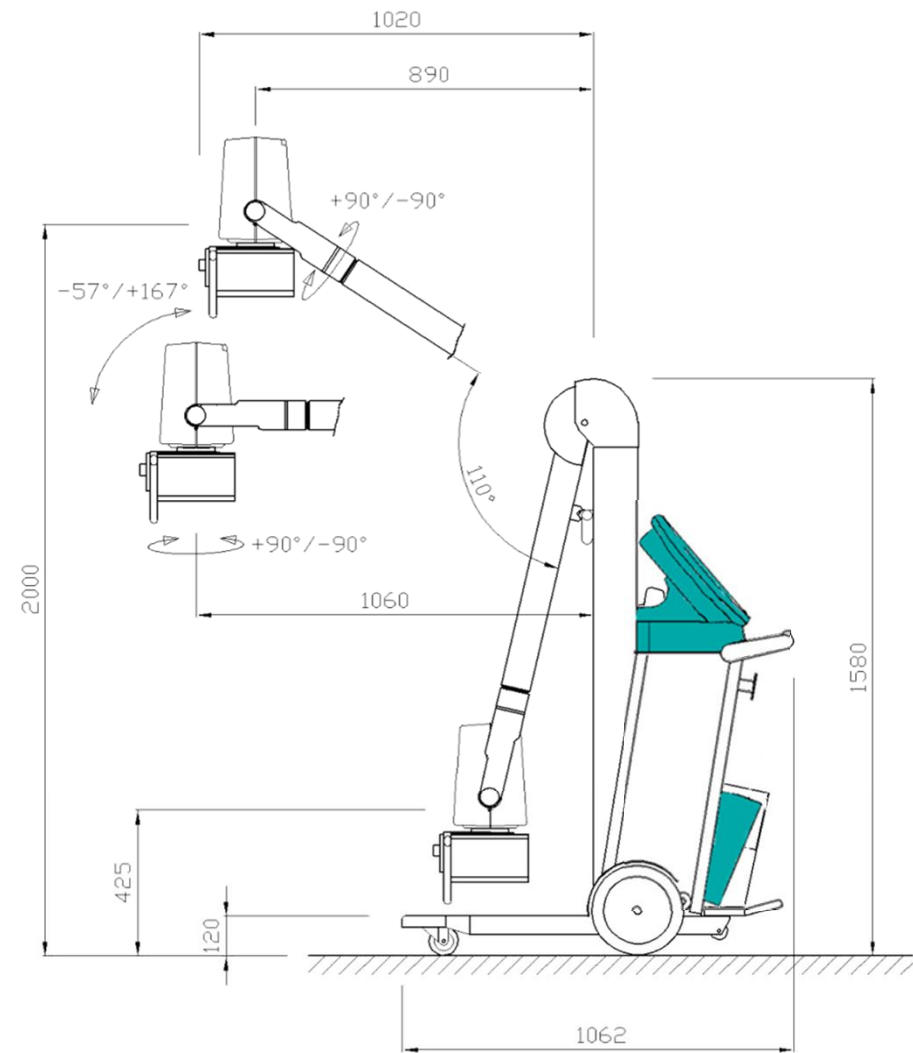
Overall dimensions (in mm)



Mechanical features

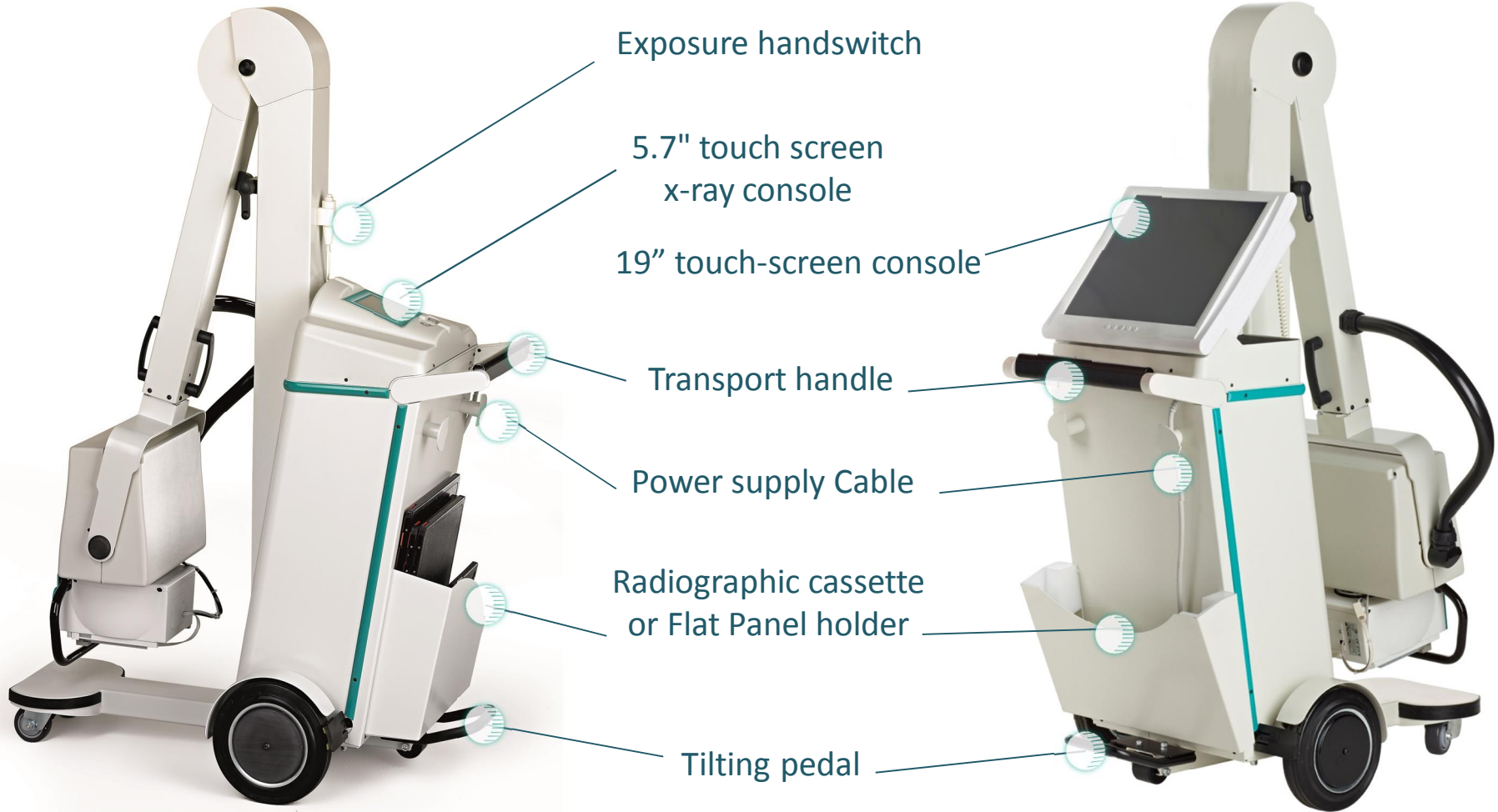
Description	Value
Balanced and articulated arm	Yes
Monobloc rotation in the yoke (Z – axis)	-57° / +167°
Monobloc yoke support rotation (X - axis)	-90° / +90°
Collimator rotation (Y-axis)	-90° / +90°
Focal distance movement Range	1575 mm
Control brake type	Dead-man
Rear wheel diameter	250 mm
Front wheel type	Pivoting / anti-static rubber
Dimension	106x68x158 (H) cm
Weight	165 kg (analog) 215 kg (digital)

Comparison between analog and digital version



JOLLY PLUS

JOLLY DR PLUS



JOLLY PLUS

JOLLY PLUS DR



Mechanical safety

Dead-man brakes



Electric and electronic safety



Safety and protections

- Converter power supply control
- Converter over current
- mA min and max safety device
- Monobloc working temperature
- X-ray filament safety device
- X-ray over load safety device
- X-ray tube anode rotation
- X-ray tube HU (thermal unit)
- Errors message shown on the display



Automatic line circuit breaker

JOLLY PLUS

JOLLY PLUS DR

Left knob to open or close the longitudinal blades

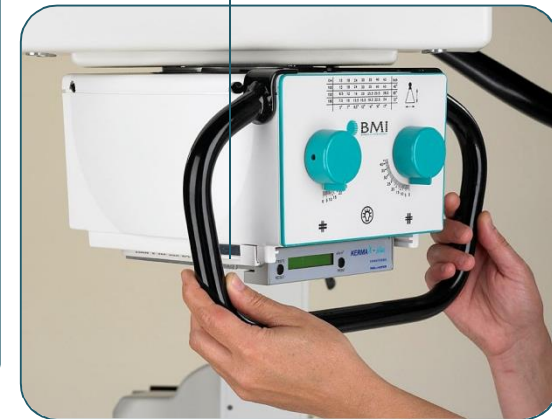
Right knobs to open or close the transversal blades



Collimator lamp (160 lux @ 1m) push-button

DAP

Retractable measure tape



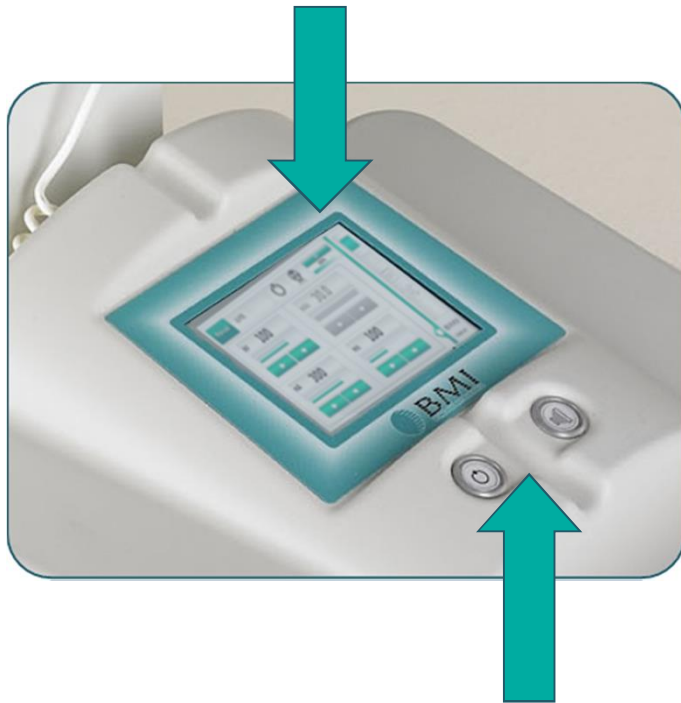
±90° Rotation

Collimator:

X-ray generator control console

JOLLY
PLUS

7" Colour TFT Touch Screen Display

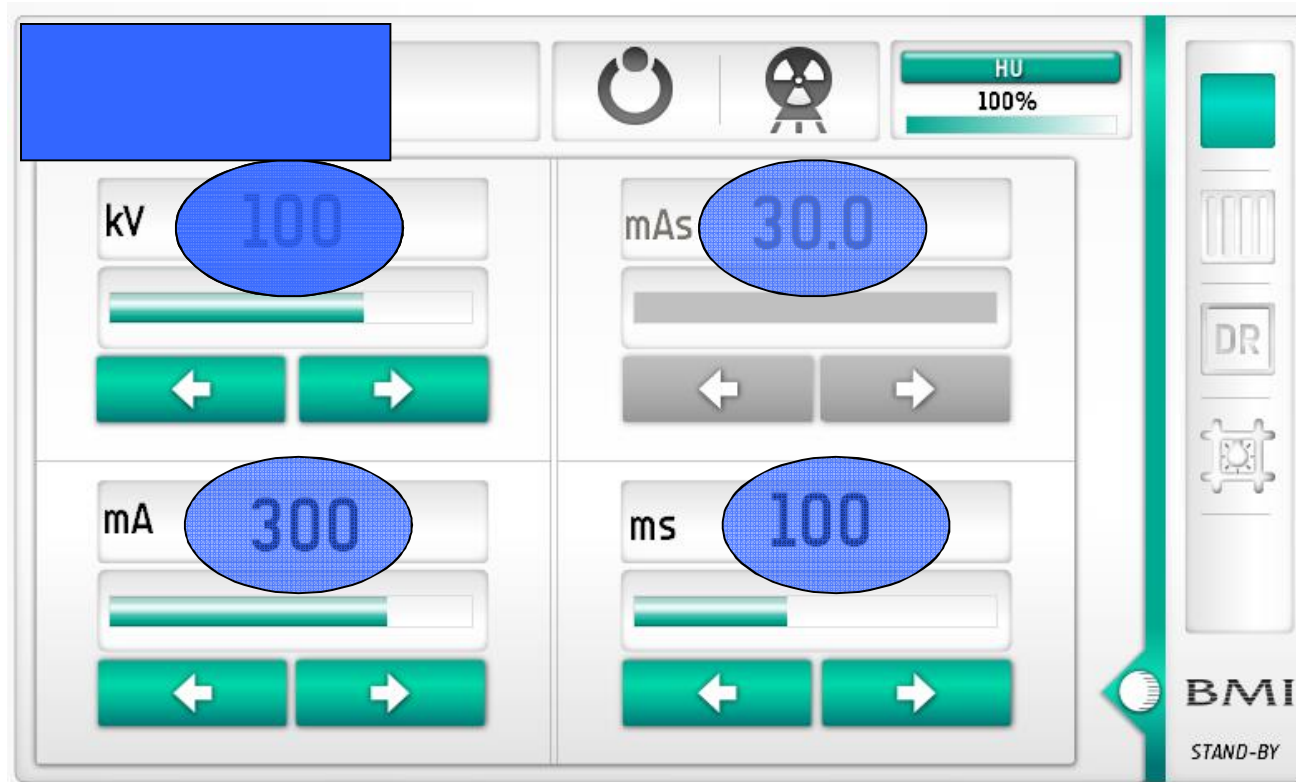


1st and 2nd time exposure push buttons



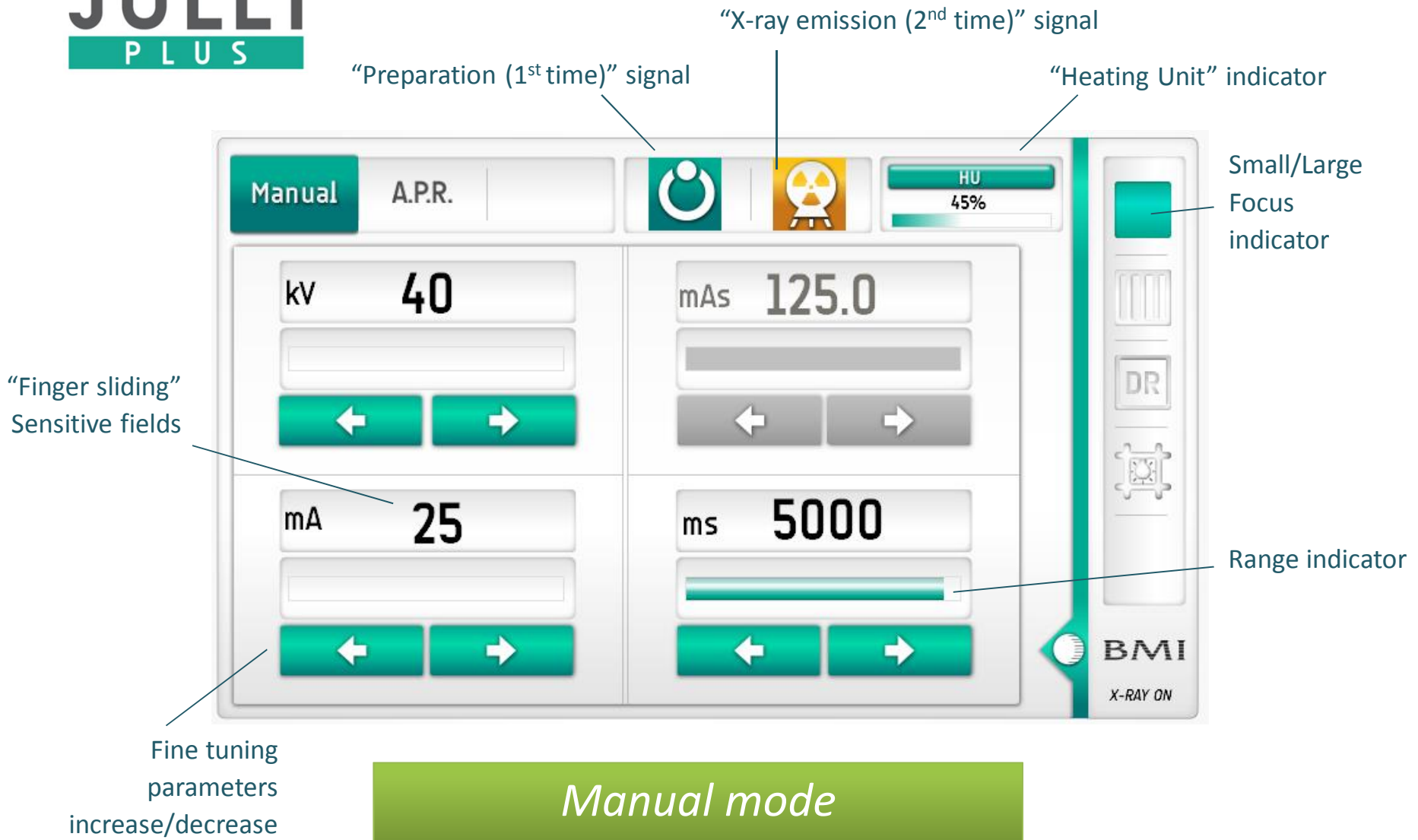
1st and 2nd time exposure handswitch

20pinningchridae



Control console

JOLLY PLUS



Manual mode

JOLLY PLUS

The image shows the APR menu interface for the JOLLY PLUS system. At the top, there are tabs for 'Manual' and 'A.P.R.', with 'A.P.R.' being the active tab. To the right of these tabs are icons for a person and a radiation symbol, and a 'HU' level indicator set to 82%. The central part of the interface features a 3D anatomical model of a human body with several white circular selection points. Below the model, there are two rows of buttons: the first row has a 'Human' button and a 'Total body' button; the second row has 'kV' and 'mAs' sliders, each with left and right arrow buttons. On the right side, there is a vertical column of five icons: a solid square, a grid, a 'DR' button, a collimator lamp icon, and a hexagon. At the bottom right, there are 'Store' and 'Revert' buttons, and the 'BMI STAND-BY' logo. Labels with arrows point to various elements: 'Select anatomic part' points to the 3D model; 'Patient size selection' points to the person icon; 'Potter bucky enable' points to the grid icon; 'DR enable' points to the 'DR' button; 'Collimator lamp' points to the collimator lamp icon; 'Screen Selection' points to the hexagon icon; 'Change presets parameters' points to the 'kV' and 'mAs' sliders; and 'Store/Revert modified parameters' points to the 'Store' and 'Revert' buttons.

Select anatomic part

Patient size selection

Potter bucky enable

DR enable

Collimator lamp

Screen Selection

Change presets parameters

Store/Revert modified parameters

Manual A.P.R.

HU 82%

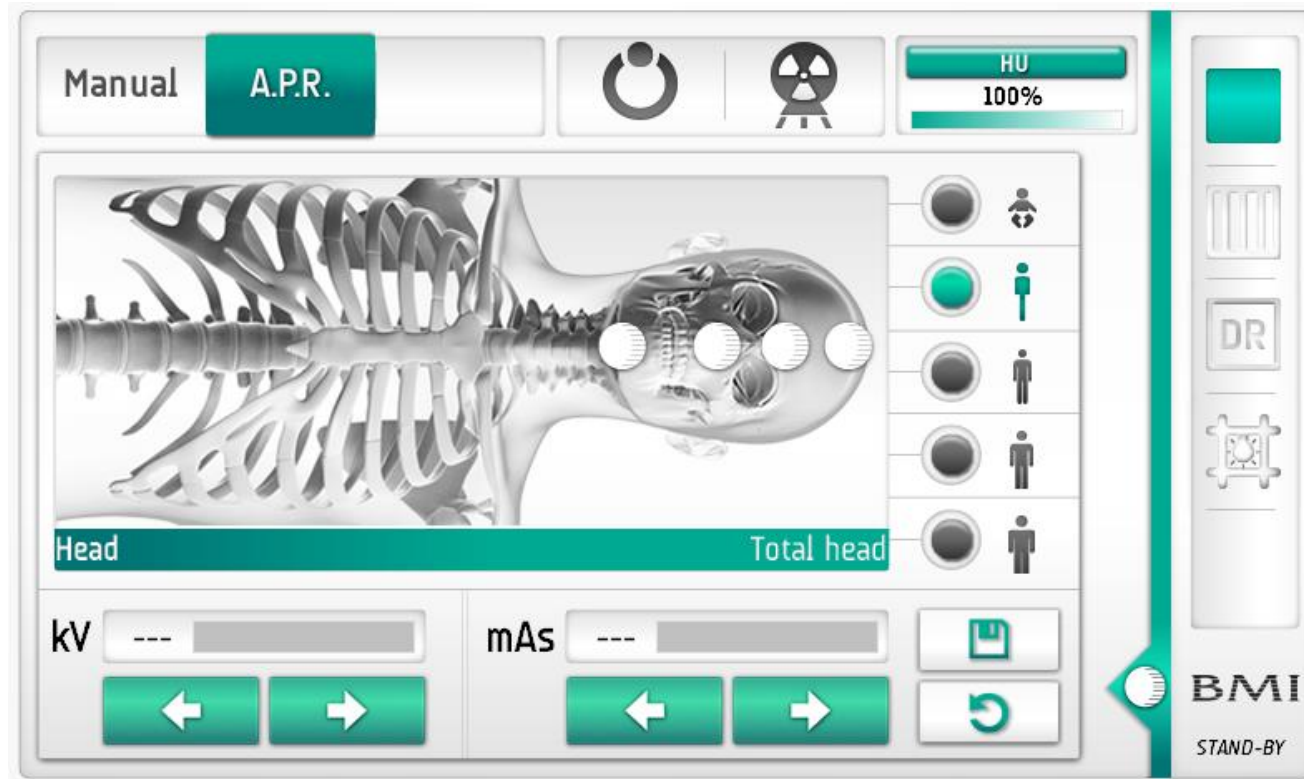
Human Total body

kV mAs

BMI STAND-BY

APR menu

JOLLY PLUS



APR submenus

X-ray generator control console

JOLLY DR PLUS



Integrated into 19" Touch Screen Display

1st and 2nd time exposure handswitch

High resolution imaging

Few **seconds** from exposure to image display.

BDIGITAL Software: acquire, display and process radiological images.

DICOM SPOOLER: Send images from the HD to the remote DICOM device.



Study menu

The screenshot shows the MobilRad.har software interface. The top menu bar includes: File, Study, Option, Help. The toolbar contains icons for: Open Archive, Save Archive, New Archive, Worklist, New Study, Open Study, Emergency Study, Copy Study(ies), Copy Study(ies) to CD, Virtual Keyboard, System Switch-off, Open Help, and Heating indicator (20.00 °C).

The main window displays a table of studies:

Patient Name	Study Date Time	Images	Stored/SC	Printed	Description	Birth Date	Patient ID
MANO	03 Aug 2004 08:34:42	1	1	1			
SPALLA 2	03 Aug 2004 08:35:54	3	3	2			
TORACE AP + LL	12 May 2004 14:06:23	2	0	0			
CRANIO	03 Aug 2004 08:34:22	4	4	4			
RACHIDE CERVICALE	03 Aug 2004 08:34:48	2	1	2			
COLONNA+GINOCCHIO	03 Aug 2004 08:33:25	4	2	4			
Gambe Due	14 Jun 2006 16:48:29	7	7	2	Immagini di input con Lut logaritmica		
Gambe Uno	14 Jun 2006 15:36:26	3	1	2	Immagini di input con Lut logaritmica		
Coperta Trasparente 02	29 Jul 2004 17:41:03	4	1	1			

System status indicators at the bottom left show: Hard Disk Free: 46.80% and Number of studies: 9. Navigation buttons (back, forward, cancel, confirm) are located at the bottom center.

Operating Screen

Image Area and Commands Area.

The screenshot displays the BMI operating interface. At the top, patient data is shown: "PAZIENTE UNO", "M 10 Feb 1995", "3018", "FP1", and "KV:90 mAs:2.5 ms:8". The central "Frames Area" contains a grayscale X-ray of a human skull in profile. Below the image, technical details are listed: "L: 16850 W: 6032", "M=1.0", "MEDICO", "10 Jun 2011 08:33", and "Image 1 / 1". On the right, the "Commands area" includes a "SELECT EXAM TYPE" section with a temperature display of "20.00 °C" and an "INFO" button. Below this is a "Processing" section with icons for "Adv Proc" and other functions. A "Search" section features a small image thumbnail and navigation arrows. The "Dicom" section at the bottom has icons for file operations. A label "RX dose" points to the top right of the interface.



Exam settings



Patient list



Generator settings



Detector status



Open exam folder list

Processing tools



90° anti-clockwise rotation



Horizontal and vertical reverse



Advanced Processing menu



LUT Manager



Electronic collimation



Overview



Detector Zoom



Virtual Keyboard

DICOM export tools



Send single image



Send entire exam



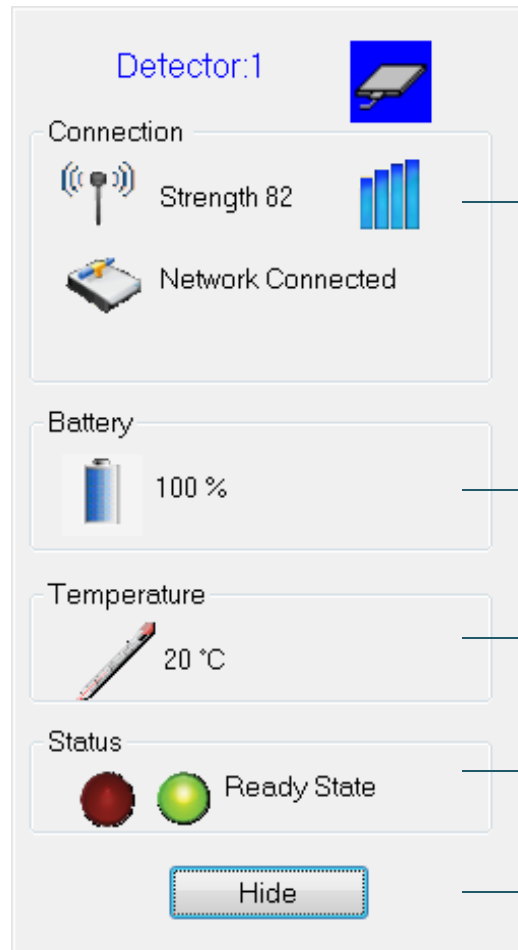
DICOM CD burning



Film editor

Info window

The Info button opens the **Detector Status** window.



Power level of the detector connection signal

Detector battery charge level

Operating temperature measured on the detector panel.
This data figure also above the INFO button.

Detector status. Shows if the detector is ready to work.

Press Hide button to close the window.

Overlay Menu



Text



Angle



Calibration



Grid



Ruler



Black mask



Image statistic menu



Frame



Arrow

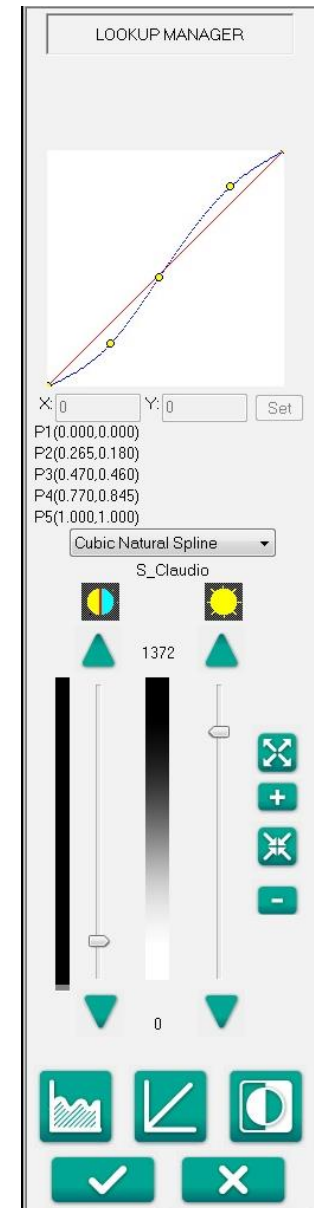
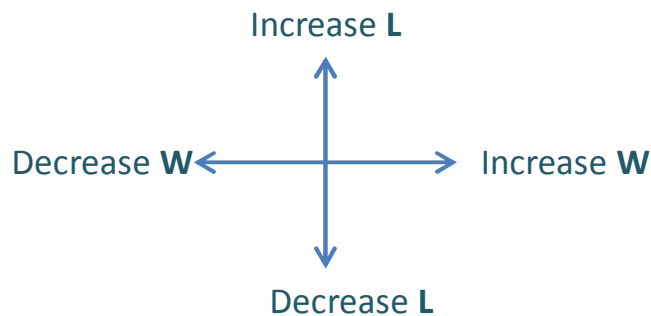


LUT (Look up table)

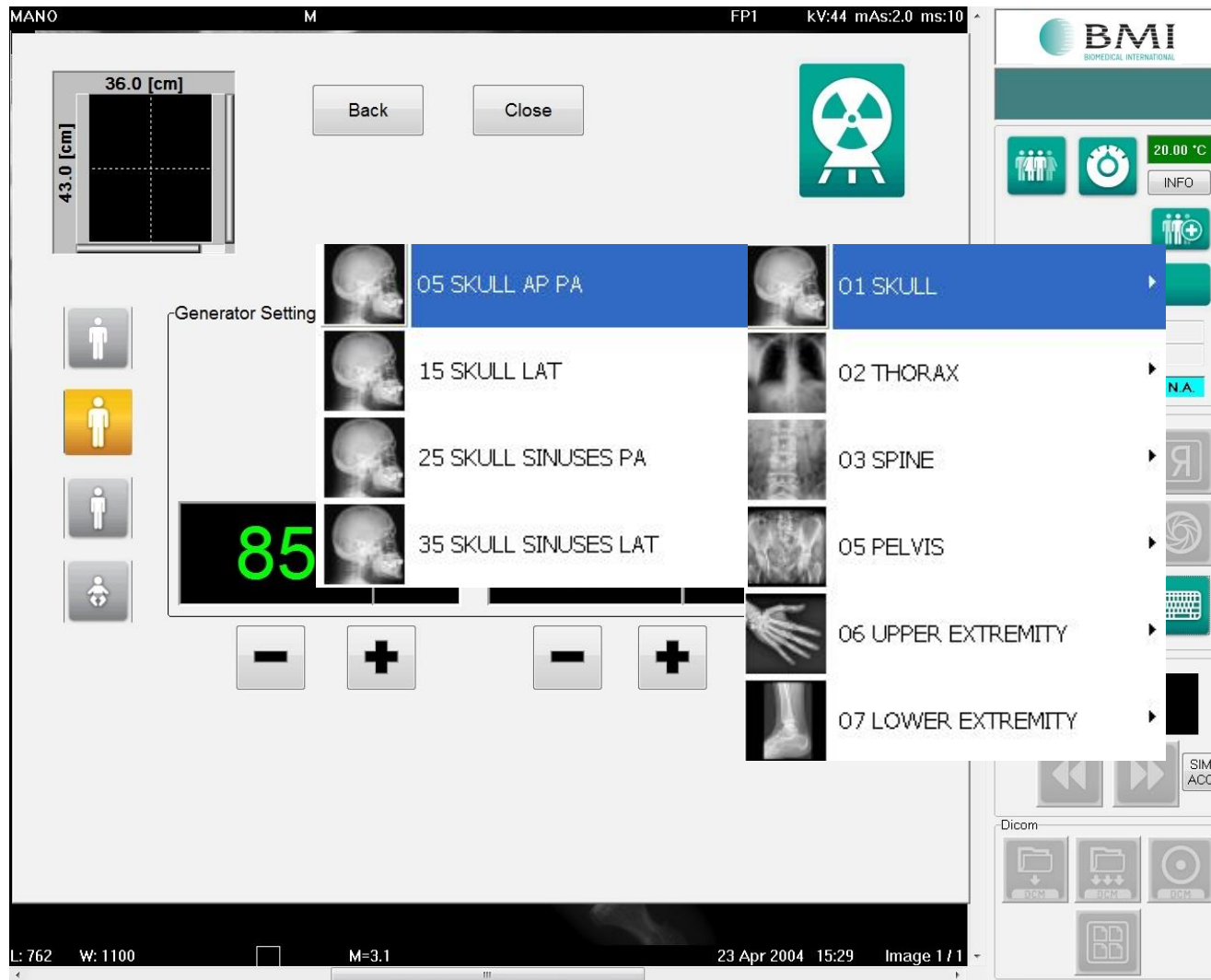
change the look of the saved images
(brightness and contrast)

This can be done in one of two ways:

- 1) Using the **cursors** in the “LOOKUP MANAGER” menu
- 2) **Click and drag** the central key on the mouse: (see drawing below).



APR (Exam Folder list)



The first step in opening a new study is to select the Exam Folder based on the **anatomical part** to be analyzed and the **kind of projection**.

JOLLY DR PLUS

High quality Cesium Flat Panel Detector

Receptor Type	Amorphous Silicon (a-Si) photodiode
Conversion Screen	Cesium Iodide (CSI)
Panel size	384 x 460 x 15 mm
Pixel Size	143 μm
Pixel Matrix	2448 (H) x 2984 (V) pixels
Limiting Resolution	3.7 Lp/mm Typ.



JOLLY DR PLUS

Workstation Panel



Display	
Screen Technology	True Color TFT LCD
Touch screen	resistive
Active screen size	483 mm (19")
Active screen size (HxV)	377x304 mm
Resolution	1 MegaPixel (1280x1024)
Display color	16.7 milion
Viewing angle (H,V)	70°(H)/170°(V)
Luminance	380 nits
Contrast ratio	1000:1

Workstation	
Processor	Intel Core 2 Duo
Memory	2 GB DDR2 @ 400 MHz
Hard Disk Drive	SATA Hard Disk Drive 250 GB
DVD-R/RW CD-R/RW Combo drive	Yes
Operating System	Window 7
Local Storage of uncompressed images	>15000
Preview Image	4 seconds
Full Post Processed Image	<10 seconds

JOLLY 4 KW

PLUS

Description	Value
Max power	4 kW (40 mA - 100 kV @ 100 msec)
Generator frequency	40 kHz
H.T. control	High frequency
Max. ripple	< 2 % @ max power
kV increasing time	< 3 msec
Exposure time	1 msec ÷ 6300 msec. (35 steps) Range: 1 • 2 • 3 • 6 • 8 • 10 • 12 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400 • 500 • 630 • 800 • 1000 • 1250 • 1500 • 2000 • 2500 • 3000 • 4000 • 5000 • 6300 msec
kV variation range	40 ÷ 110 kV (step 1 kV)
mAs range 2 point technique	0,2 ÷ 200 mAs (25 steps) Range: 0,2 • 0,5 • 0,8 • 1 • 2 • 2,5 • 3 • 4 • 5 • 6,3 • 8 • 10 • 12,5 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 mAs
mA range	25 ÷ 100 mA (6 steps) Range: 25 • 40 • 50 • 63 • 80 • 100 mA

Radiological Features



JOLLY 6 KW

PLUS

Description	Value
Max power	6,3 kW (63 mA – 100 kV @ 100 msec)
Generator frequency	40 kHz
H.T. control	High frequency
Max. ripple	< 2 % @ max power
kV increasing time	< 3 msec
Exposure time	1 msec ÷ 6300 msec. (35 steps) Range: 1 • 2 • 3 • 6 • 8 • 10 • 12 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400 • 500 • 630 • 800 • 1000 • 1250 • 1500 • 2000 • 2500 • 3000 • 4000 • 5000 • 6300 msec
kV variation range	40 ÷ 110 kV (step 1 kV)
mAs range 2 point technique	0,2 ÷ 200 mAs (25 steps) Range: 0,2 • 0,5 • 0,8 • 1 • 2 • 2,5 • 3 • 4 • 5 • 6,3 • 8 • 10 • 12,5 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 mAs
mA range	25 ÷ 125 mA (7 steps) Range: 25 • 40 • 50 • 63 • 80 • 100 • 125 mA

Radiological Features

JOLLY 15 KW

PLUS

Description	Values
Max power	15 kW (150 mA - 100 kV @ 100 msec)
Generator frequency	40 kHz
H.T. control	High frequency
Max ripple	< 2% @ maximum power
kV value increasing time	< 3 msec
Exposure time	1 msec ÷ 6300 msec (35 steps) Range: 1 • 2 • 3 • 6 • 8 • 10 • 12 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400 • 500 • 630 • 800 • 1000 • 1250 • 1500 • 2000 • 2500 • 3000 • 4000 • 5000 • 6300 msec
kV value variation range	40 ÷ 125 (step 1 kV)
mAs range 2 point technique	0.2 ÷ 250 mAs (26 steps) Range: 0,2 • 0,5 • 0,8 • 1 • 2 • 2,5 • 3 • 4 • 5 • 6,3 • 8 • 10 • 12,5 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 mAs
mA Range	25 ÷ 250 mA (10 steps) Range: 25 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 mA

Radiological Features

JOLLY 16 KW

PLUS

Description	Values
Max power	16 kW (160 mA - 100 kV @ 100 msec)
Generator frequency	40 kHz
H.T. control	High frequency
Max ripple	< 2% @ maximum power
kV value increasing time	< 3 msec
Exposure time	1 msec ÷ 6300 msec (35 steps) Range: 1 • 2 • 3 • 6 • 8 • 10 • 12 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400 • 500 • 630 • 800 • 1000 • 1250 • 1500 • 2000 • 2500 • 3000 • 4000 • 5000 • 6300 msec
kV value variation range	40 ÷ 125 (step 1 kV)
mAs range 2 point technique	0.2 ÷ 250 mAs (26 steps) Range: 0,2 • 0,5 • 0,8 • 1 • 2 • 2,5 • 3 • 4 • 5 • 6,3 • 8 • 10 • 12,5 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 mAs
mA Range	25 ÷ 250 mA (10 steps) Range: 25 • 40 • 50 • 63 • 80 • 100 • 125 • 160 • 200 • 250 mA

Radiological Features

JOLLY 20 KW

PLUS

Description	Values
Max power	20 kW (200 mA - 100 kV @ 100 msec)
Generator frequency	40 kHz
H.T. control	High frequency
Max ripple	< 2% @ maximum power
kV increasing time	< 3 msec
Exposure time	1 msec ÷ 6300 msec (35 steps) Range: 1 • 2 • 3 • 6 • 8 • 10 • 12 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400 • 500 • 630 • 800 • 1000 • 1250 • 1500 • 2000 • 2500 • 3000 • 4000 • 5000 • 6300 msec
kV variation range	40 ÷ 125 (step 1 kV)
mAs range 2 point technique	0.2 ÷ 252 mAs (26 steps) Range: 0,2 • 0,5 • 0,8 • 1 • 2 • 2,5 • 3 • 4 • 5 • 6,3 • 8 • 10 • 12,5 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 252 mAs
mA Range	25 ÷ 300 mA (11 steps) Range: 25 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 mA

Radiological Features

JOLLY PLUS

30 KW

JOLLY DR PLUS

Description	Values
Max power	30 kW (300 mA - 100 kV @ 100 msec)
Generator frequency	40 kHz
H.T. control	High frequency
Max ripple	< 2% @ maximum power
kV increasing time	< 3 msec
Exposure time	1 msec ÷ 6300 msec (35 steps) Range: 1 • 2 • 3 • 6 • 8 • 10 • 12 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400 • 500 • 630 • 800 • 1000 • 1250 • 1500 • 2000 • 2500 • 3000 • 4000 • 5000 • 6300 msec
kV variation range	40 ÷ 125 (step 1 kV)
mAs range 2 point technique	0.2 ÷ 315 mAs (27 steps) Range: 0,2 • 0,5 • 0,8 • 1 • 2 • 2,5 • 3 • 4 • 5 • 6,3 • 8 • 10 • 12,5 • 15 • 20 • 25 • 30 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 315 mAs
mA Range	25 ÷ 400 mA (13 steps) Range: 25 • 40 • 50 • 63 • 80 • 100 • 125 • 150 • 200 • 250 • 300 • 350 • 400mA

Radiological Features

OEM customized design

Example 1



OEM customized design

Example 1



OEM customized design

Example 2



OEM customized design

Example 2



OEM customized design

Example 2



Your reliable Partner

long years of experience in X-ray business field
longue expérience dans le domaine radiologique

technical support and service
support technique et assistance

extensive dealers network
réseau de distribution étendu



BMI BIOMEDICAL INTERNATIONAL srl
Via E. Fermi 52 Q/R - Curno (BG) - ITALY
Ph. +39 035.43.76.381 - Fax +39 035.43.76.401
www.bmibiomedical.it - e-mail: info@bmibiomedical.it

