

BCA 9R Plus

Product data

Digital Mobile C-Arm

ELECTRICAL CHARACTERISTICS

• Voltage	230 Vac \pm 10% monophase standard 105 / 115 / 125 / 220 / 240 Vac \pm 10% monophase on request
• Frequency	50 Hz standard 60 Hz on request
• Absorbed current on Stationary Anode Unit	4.5 A @ 230 Vac and 7.5 A @ 115 Vac in fluoro mode 20 A @ 230 Vac and 28 A @ 115 Vac in radiography mode
• Line compensation	Automatic
• Line resistance	< 0.4 Ω (supply at 230V) < 0.2 Ω (supply at 115V)
• Standard mains plug	16 A (for supply at 230 Vac)

RADIOLOGICAL DATA

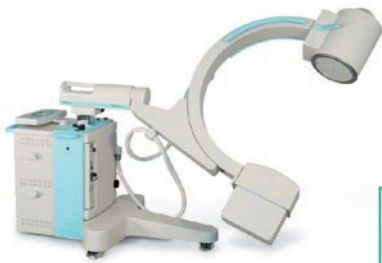
• Generator power in DC current	5 kW (100 kV, 50 mA, 64 ms)
• High frequency inverter	40 kHz
• Max. Ripple	<2% @ 100 kV
• Max high voltage (radiography and fluoroscopy)	120 kVp
• Max current in continuous fluoroscopy	8 mA
• Max current in fluoroscopy "Boost"	12 mA
• Max current in radiography	25 mA @ 230 V 18 mA @ 115 V
• Max mAs in radiology	125 mAs @ 230 V 90 mAs @ 115 V
• Exposure Time in radiography	0.04 \div 5 sec

MONOBLOC

• Anode	Rotating
• Anode inclination	10°
• Focal Spot size according to IEC 336	0.3 mm small focus 0.6 mm large focus
• Nominal anodic power	5 kW small focus 17 kW large focus
• Max anode cooling speed	33 kHU/min (25 kJ/min)
• Monobloc thermal capacity	600 kJ (670 kHU)
• Max continuous thermal dissipation of the monobloc	75 W, 102 HU/sec, 6120 HU/min
• Max. Fluoroscopy time	HU safety after 28' of fluoroscopy @ 120 kV, 5 mA (600 W)
• Max fluoroscopy time @75W	75 kV - 1mA - Continuous fluoro (no limits)
• Max fluoroscopy time @280W	80 kV - 3.5 mA - 54 Minutes
• Max fluoroscopy time @400W	100 kV - 4 mA - 38 Minutes
• Max fluoroscopy time @525W	70 kV - 7.5 mA - 31 Minutes
• Max fluoroscopy time @550W	110 kV - 5 mA - 30 Minutes
• Max fluoroscopy time @600W	120 kV - 5 mA - 28 Minutes
• Total filtration	> 2.7 mm Al



BMI
BIOMEDICAL INTERNATIONAL



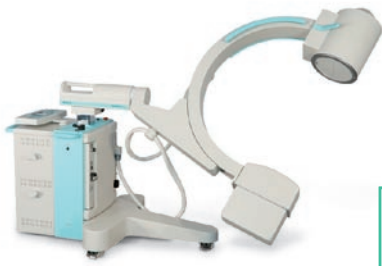
BCA 9R Plus

Product data

Digital Mobile C-Arm

COLLIMATOR	<ul style="list-style-type: none"> • Type • Iris • Orientable shutters 	Standard: Iris + parallel shutters Control by console with adjustable continuous opening until the max. allowed in function of the I.I. field selected. Iris automatic limitation on the I.I. field selected Control by console for the opening/closing and clockwise/anti-clockwise rotation
IMAGE INTENSIFIER TUBE - 9/6/4"	<ul style="list-style-type: none"> • Field Number • Input nominal diameter • Resolution (central) • Conversion factor • Contrast Ratio • DQE @ 59.5 kV • MTF • Integral Distortion • "All metal" Technology • Input screen "Hi-Res" • Antiscatter fixed grid 	3 230 mm 48 / 56 / 64 lp/cm 240 / 120 / 60 (cd · m ⁻² / mR · s ⁻¹) 23:1 / 25:1 / 30:1 65% 60% / 65% / 70% @ 10lp/cm 25% / 30% / 40% @ 20lp/cm 4% / 2% / 1% Yes Yes Ratio 8:1, 36 shutters/cm, focus 80 cm
CCD CAMERA 0.5K x 0.5K	<ul style="list-style-type: none"> • Matrix • Technology • Video Standard • Video Bandwidth • Aspect ratio • Signal - Noise Ratio • Automatic video level compensation • Dynamic contrast shading 	752 x 582 pixels CCD sensor (470.000 pixels) CCIR 625/50Hz interlaced with 752 x 582 pixels 20 MHz ±3dB 4:3 Interlaced scanning 65 dB YES YES





BCA 9R Plus

Product data

Digital Mobile C-Arm

DIGITAL IMAGE SYSTEM WITH 0.5K x 0.5K CCD CAMERA

	LIH	1+330	1+2700	DIP 3000A
Image format	768 x576 x12bits 50 Hz 256 grey level	768 x576 x12bits 50 Hz 256 grey level	768 x576 x12bits 50 Hz 256 grey level	576 x576 x 12 bits
Image format working memory	N.A.	N.A.	N.A.	576 x 576 x 12 bits
Number of images	1 RAM	1 + 330 Non volatile	1 + 2700 Non volatile	1 + 192 buffer RAM
Number of images on Hard Disk	NO	NO	NO	About 40.000
Programmable frame rate acquisition	NO	NO	NO	YES 1, 3, 6 fps
Number of monitors	1 (17")	2 (19")	2 (19")	2 (19")
Flicker Free	YES	YES	YES	YES
Recursive filter, Noise Reduction, OFF	YES 0, 2, 4, 8, 16	YES 0, 2, 4, 8, 16	YES 0, 2, 4, 8, 16	YES 0, 2, 4, 8, 16
Smart filter, motion detector	NO	NO	NO	YES (algorithms)
Editing data patient	NO	YES	YES	YES
Digital Rotation of the image without X-ray emission	YES	YES	YES	YES
Vertical / Horizontal Image inversion	YES in combination with rotation	YES in combination with rotation	YES in combination with rotation	YES
Left / Right image inversion	NO	NO	NO	YES
Edge enhancement	YES Smooth, Normal Sharp	YES Smooth, Normal Sharp	YES Smooth, Normal Sharp	YES Smooth, Normal Sharp in real time
Grey scale inversion (negative / positive)	NO	YES	YES	YES
Cine loop review	NO	NO	NO	YES
Real Time Subtraction (DSA)	NO	NO	NO	YES
Max opac.	NO	NO	NO	YES
Road-mapping, capability for catheter placement	NO	NO	NO	YES
Shifting Pixel	NO	NO	NO	YES
Land marking	NO	NO	NO	YES
Overview	NO	NO	NO	YES, 4 / 16 images
Zoom	NO	NO	NO	YES by 2
Virtual Shutter	NO	NO	NO	YES
Contrast Enhancement	NO	NO	NO	YES with Logaritmic Exponential curve
Digital adjustment for contrast / brightness	NO	NO	NO	YES
Text editing	NO	NO	NO	YES
Overlay Note	NO	NO	NO	YES
Patients Directory	NO	NO	NO	YES
Infrared Remote Control	NO	NO	NO	Optional
Start-Stop DVD Recorder synchronization	NO	NO	NO	YES



BMI
BIOMEDICAL INTERNATIONAL



BCA 9R Plus

Product data

Digital Mobile C-Arm

MONITORS COLOR LCD DISPLAY

VERSION	17"	19"
• Panel / type	17" TFT active matrix LCD, anti veiling glare, medical	19" TFT LCD anti-glare, medical
HARDWARE REQUIREMENTS	• Brightness and contrast controls	Dedicated knobs Front pushbuttons
ELECTRICAL CHARACTERISTICS	• Standard power supply	18Vdc ±10%
	• Current absorbed	3 A
	• Power absorbed	55 W
		110 to 240 Vac 60/50Hz --- 42 W
DISPLAY CHARACTERICS	• Visibility angle	180°
	• Contrast	1000:1
	• Resolution	1280 x 1024
	• Pixel pitch	0.264 x 0.264 mm
	• Active Display area	---
	• Gray scale	768 levels
	• Max luminance	350 Cd/m ²
	• Aspect ratio	4:3
	• Response time	25 ms
	• Video input	2 BNC connectors 2 BNC connectors 75 Ohm
		178° 800:1 1280 x 1024 0.294 x 0.294 mm 376 mm (H) x 301 mm (V) 256 x 3 = 768 levels / 16.7 Million colours 250 Cd/m ² 4:3 15 ms 2 x BNC / 1 x D-Sub (VGA) / 1 x D-Sub (DVI-D)
ENVIROMENT AND RELIABILITY	• Operative	Temperature: from 0° to +40°C Humidity: 10% to 80% (non condensing)
	• Temperature and storage	Temperature: from -20° to +60°C Humidity: 5% to 85% (non condensing)
		Temperature: from 0° to +40°C Humidity: 20% to 80% (non condensing) Temperature: from -30° to +70°C Humidity: 10% to 80% (non condensing)





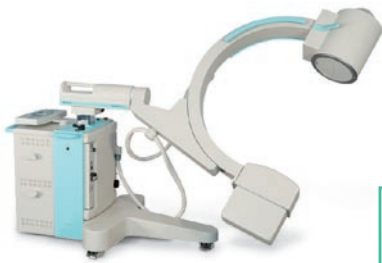
BCA 9R Plus

Product data

Digital Mobile C-Arm

FUNCTIONALITY	DESCRIPTION	DATA
	User's interface	Membrane keyboard with alphanumeric touch-screen 5.7" LCD display for all the operative parameters and messages of eventual faulty conditions. Microprocessor management. User interface control could be rotate of 60°
	Selectable languages	Italian, English, French, German, Spanish (selection by set-up)
	I.I. field selection	Electronic zoom selection according to the number of I.I. fields with automatic limitation of the radiated field by the iris collimator.
	Thermal units	Check and visualization in real time of thermal units on the display according to the applied load. From 100% to 5% XR enabled. When there are 5 minutes of fluoroscopy (for the kV and mA values in use in that moment) to reach the 5% of the HUT, a particular audio-visible signal is activated. If more than 5 minutes are necessary to finish the exam, the fluoroscopy data have to be lowered. After reaching the 5% of the available HUT, the x-ray emission is stopped (*). In order to go on with the fluoroscopy, it is necessary to wait that the HUT have reached at least the 10%. (* In particular conditions it is possible to exclude this block and go on with the exam, under the direct responsibility of the qualified personnel or the doctor that uses the unit. In radiography it is not possible to control the x-ray emission any more when the 5% of the available HUT is reached.
	Fluoroscopy control	Multi-functioning foot switch: <ul style="list-style-type: none"> ➢ Pedal for continuous, pulsed and single shot (boost) fluoroscopy (functions selection by 3 different foot switches). ➢ Storage image on memory by foot switch without interrupting fluoroscopy
	On Stand	General magneto-thermic switch Key safety switch Emergency pushbutton Printer for Dose Area meter (optional)
	Monitor position	Directly on the stand with 1 monitor LCD orientable 17" NL series or: Monitor trolley with five wheels, two of them with stationary brake Lamp for x-ray emission warning Cable winding support Digital system with CCD 0.5K x 0.5 K Two monitors LCD 19" Alphanumeric keyboard Thermal Printer Sony or equivalent Medical Image Capture Device: MediCap USB150
	Safeties	Filament current Monobloc temperature Overload kV min/max. or fault H.V. Stored data check





BCA 9R Plus

Product data

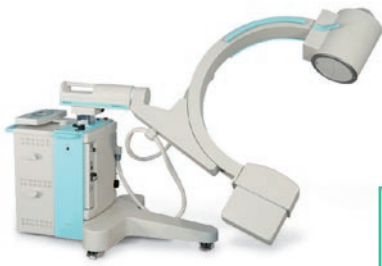
Digital Mobile C-Arm

OPERATIONAL MODES WITH 0.5K x 0.5K CCD CAMERA

OPERATIONAL MODES	MODE	CHARACTERISTIC	PERFORMANCES
Continuous fluoroscopy	Dose control (kV - mA)	Automatic or manual	
	Small Focus	0.3 mm (IAE Tube)	
	kV variation range	40 - 120 kV	
	mA variation range	0.5 - 8 mA	
	kV - mA correlation	Standard: 40 kV / 0.5 mA, 80 kV / 7.6 mA, 120 kV / 8mA	
	Safety timer	Audible alarm resettable after 5' x-Ray x-Ray stop after 10' of continuous radiations according to IEC 60601-2-7 §29.1.104	
	Last image hold (LIH)		
Pulsed fluoroscopy	Range of exposure rate variation (Selectable by console)	From 2 image/sec to 1 image every 5 sec (2 image / 1s; 1image / 1s; 1 image / 2s; 1 image / 3s; 1 image / 5s)	
	XR flash time	Minimum time for better image	
	Other characteristics as per the continuous fluoroscopy		
One-shot Digital Radiography	mA variation range	1 - 12 mA	
	XR flash time	< 1 sec	
	Acquisition obtained by integrating 16 following readings		
	Automatic storage of the image on RAM or "nonvolatile memory", according to the memory type		
	Other characteristics as for the continuous fluoroscopy		
mA 1/2 fluoroscopy	mA variation range	0.25 - 4 mA	
	kV - mA correlation	40 kV / 0.25 mA, 80 kV / 3.8 mA, 120 kV / 4mA	
	Other characteristics as per the continuous fluoroscopy		
Anatomic APR selection, in fluoroscopy	APR 1 mA Low	Anatomic fine parts or paediatric use from 0.7 mA to 6.6 mA 40 kV / 0.7 mA 80 kV / 6.4 mA 120 kV / 6.6 mA	
	APR 2 mA Low	Lungs from 0.5 mA to 7 mA 40 kV / 0.5 mA 80 kV / 7 mA 120 kV / 5.5 mA	
	The curves cannot be modified by the operator		
Radiography	Working technique	2 points with kV and mAs setting	
	Large Focus	0.6 mm (IAE Tube)	
	kV variation range	40 - 120 kV	
	mA variation range	@ 230 Vac 25 mA fixed from 40 kV to 100 kV; 20 mA at 120 kV	@ 115 Vac 18 mA fixed from 40 kV to 100 kV; 15 mA at 120 kV
	mAs variation range	@ 230 Vac 1 - 125 mAs from 40 to 100kV 1 - 100 mAs from 101 to 120kV in 42 steps, R 20 curve	@ 115 Vac 1 - 90 mAs from 40 to 100kV 1 - 71 mAs from 101 to 120kV
	Times range	0.04 - 5 sec max	
	Use coefficient (duty cycle)	Calculated as per the anode dissipation	
APR anatomic selection in radiography	Description	Norm	Paediatric Adult
	APR 1 Head	77 kV 56 mAs	74 kV 45 mAs 80 kV 71 mAs
	APR 2 Lungs	110 kV 11 mAs	107 kV 9m As 110 kV 14 mAs
	APR 3 Pelvis	85 kV 22 mAs	82 kV 28 mAs 88 kV 18 mAs
	Possibility to change and store with every APR: kV and mAs		



BMI
BIOMEDICAL INTERNATIONAL



BCA 9R Plus

Product data

Digital Mobile C-Arm

ENVIRONMENTAL CONDITIONS

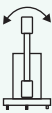
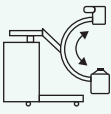
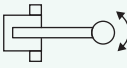
Environmental condition in Normal Use	Temperature: from +10° to +40° Celsius Humidity: from 30% to 75% non condensing Pressure: from 700 to 1060 hPa
Environmental condition in Transport and Warehouse	Temperature: from -25° to +70° Celsius Humidity: from 10% to 90% not condensing Pressure: from 500 to 1060 hPa

WEIGHT AND DIMENSION

Description	Stand	Trolley, mod. "Low"	Trolley, mod. "Standard"	Trolley, mod. "High"
Weight	About 360 kg	About 67 kg	About 97 kg	About 150kg
(1) Width	859 mm	830 mm	870 mm	872 mm
(2) Depth in transport position	2000 mm	855 mm	855 mm	577 mm
(3) Height in transport position	1780 mm	1605 mm	1605 mm	1603 mm

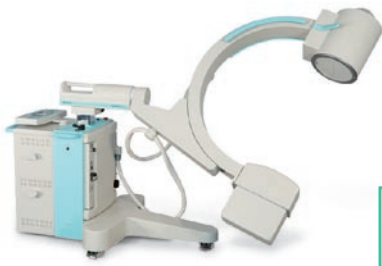
Weights and dimensions can vary with different accessories

MECHANICAL CHARACTERISTICS

Vertical motion		500 mm motorized in 60 sec
Horizontal motion		210 mm
Panning motion		± 270°
Orbital rotation		123° (+90° ÷ - 33°)
Pivotal rotation		± 12.5°
Free Space		770 mm
Depth		690 mm
S.I.D.		970 mm
Focus Skin distance		200 mm
Movement		Manual. Steering rear wheels with manual control by the operator, swiveling front wheel. Stationary brake by hand
Stand Wheels diameter		Rear: Double wheels 125 x 40 mm Front: Double wheels 80 x 30 mm
Trolley Wheels diameter		Base Trolley 5 x 80 x 35 mm with brake High configuration Trolley 4 x 125 x 30 mm with brake
Protection against cables squashing		Semi-rigid rubber core-hitch on all the wheels of the stand.



BMI
BIOMEDICAL INTERNATIONAL



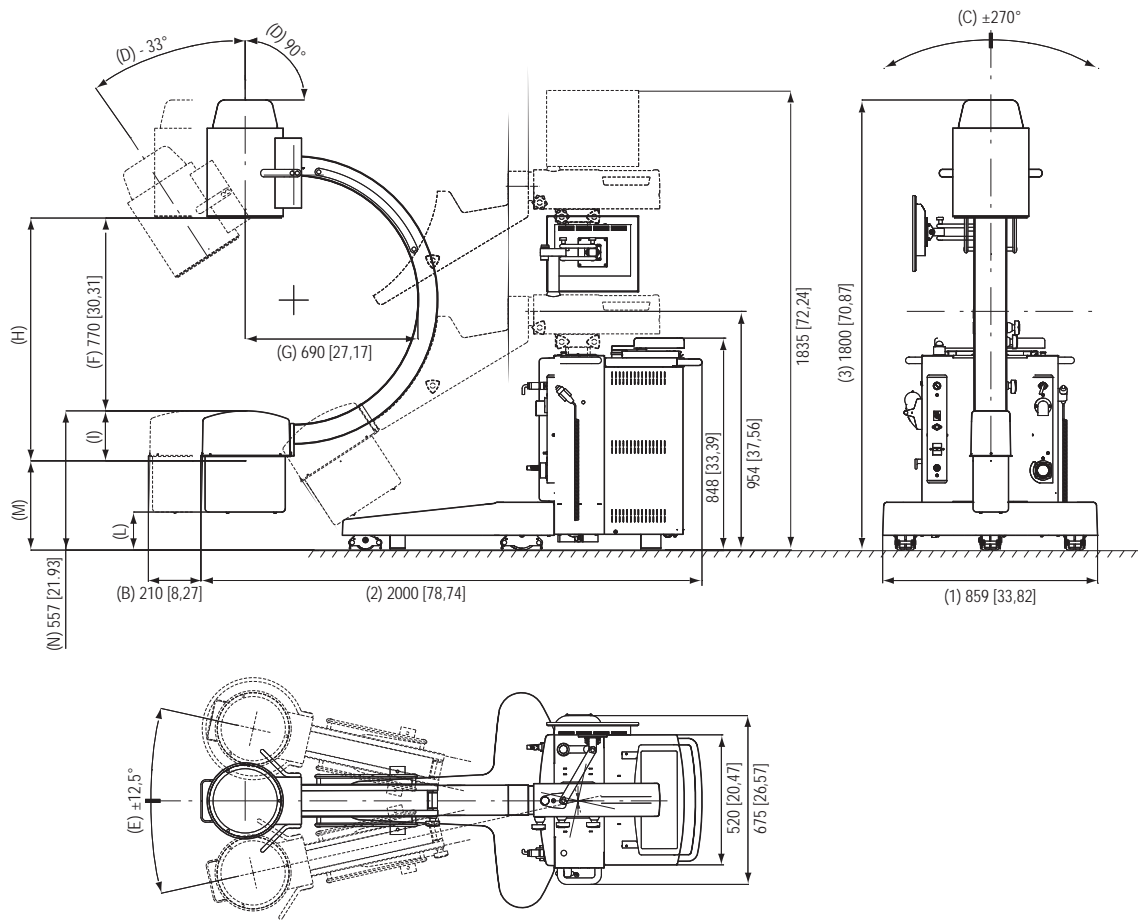
BCA 9R Plus

Product data

Digital Mobile C-Arm

TECHNICAL DATA

STAND Dimension in mm



	FIXED ANODE	ROTATING ANODE
(H)	988 mm	970 mm
(I)	218 mm	200 mm
(L)	172 mm	152 mm
(M)	339 mm	357 mm



BMI
BIOMEDICAL INTERNATIONAL



BCA 9R Plus

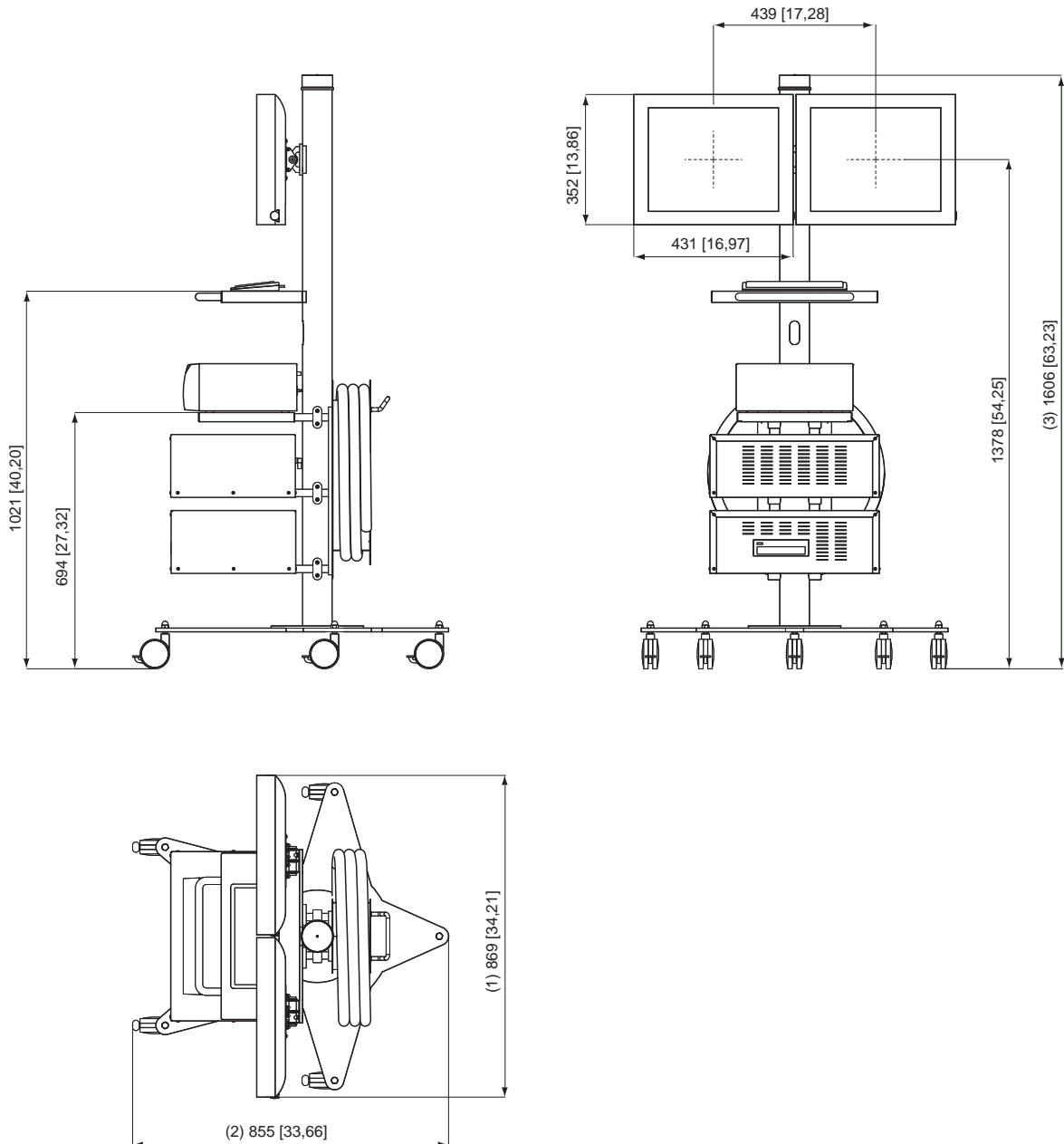
Product data

Digital Mobile C-Arm

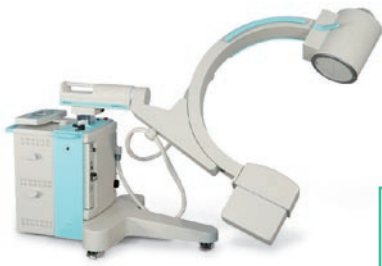
TECHNICAL DATA

TROLLEY MOD. "STANDARD"

Dimension in mm



BMI
BIOMEDICAL INTERNATIONAL



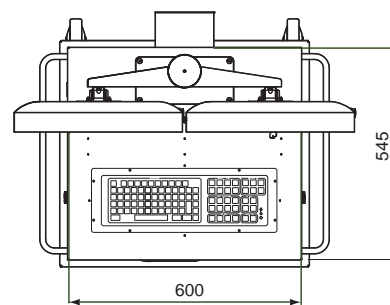
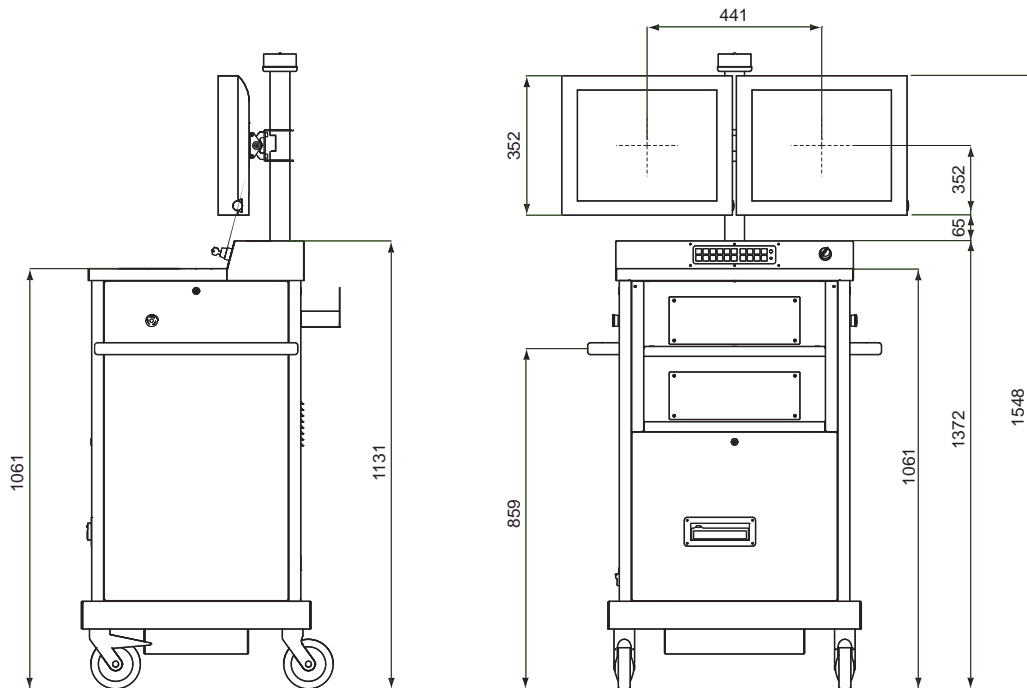
BCA 9R Plus

Product data

Digital Mobile C-Arm

TECHNICAL DATA

TROLLEY MOD. "HIGH"



Note

Technical Specs can be subject to changes, in order to grant the highest quality levels, and so they can vary without notice obligation



BMI
BIOMEDICAL INTERNATIONAL

ESSE 3 Via Garibaldi 30
14022 Castelnuovo D.B. (AT)
tel +39 011 99 27 706
fax +39 011 99 27 506
e-mail esse3@tuttopmi.it
web : www.4ci.com

