C-Arm with FPD

Technical Data | **Digital Flat Panel C-Arm**

C-ARM MECHANICAL FEATURES	
Source Image Distance (SID)	111.3 cm
Free space	91.2 cm
C-arm depth	71.5 cm
Orbital rotation	146° (-56° ÷ +90°)
Horizontal travel	20 cm
Vertical travel	40 cm
Swivel range	± 10.5°
Pivot rotation	± 240°
Reverse position	Yes
Source-Skin distance	20 cm
H x W x D of C-arm frame	162.3 x 78 x 209.4 cm
Weight	320 kg
STAND MONITOR	
Type	Touch screen Colour, TFT (IPS)
Active area (W x L)	21.6 x 13.5 cm
Size	10.1”
Resolution	1280 × 800
POWER SUPPLY REQUIREMENT	
Voltage	230 Vac (± 10%) Optional: 105/115/125 V (± 10%) with transformer 60 Hz
Line frequency	50 ÷ 60 Hz
Standby current	1.5 A
Current consumption	10 A (230 Vac)
PC - WORKSTATION	
Hardware	Intel Core i5 microprocessor with PCI bus architecture, 4 GB RAM, SSD drive, USB 3.0
Storage Hard-disk capacity	2 TB
MEDICAL GRADE LCD MONITOR	
Type	Colour TFT LCD Panel (IPS)
Backlight	White LEDs
Size	48 cm (19”)
Active area (H×V)	376 x 301 mm
Pixel pitch	0.294 x 0.294 mm
Display colours	8-bit colours: 16.77 million colours
Resolution	1280 x 1024 (5:4 aspect ratio)
Contrast Ratio (typical)	900:1
Brightness (typical)	700 cd/m²
Viewing Angles (H / V, typical)	178° / 178°
Certifications and standards	CE (Medical Device), IEC/EN60601-1, CAN/CSA C22.2 No. 601.1-M90, CAN/CSA C22.2 No. 60601-1-08, UL60601-1, FCC-A, RCM, RoHS, China RoHS, WEEE, CCC, BIS

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CONNECTIVITY	
CD/DVD	DVD drive for digital image storage on CD-R, DVD+R or DVD-R for offline data exchange in DICOM 3, BMP and AVI formats
USB export	For digital image storage to a USB device in DICOM, BMP and AVI formats
Printer interface	For connection with Digital Printer (see below for a list of compatible products)
LAN	Ethernet module for DICOM services (e.g. transmission of DICOM image data to a PACS)
Optional	
Single HDMI output	Video splitter output for connecting an external Live Monitor
Double HDMI output	Video splitter output for connecting external Live and Reference monitors
Injection system interface	For synchronization with Medrad® Mark V ProVis® injection system
Neuronavigation system interface	For integration with BRAINLAB neuronavigation system
MEDICAL GRADE PRINTER (Optional)	
Model	Sony UP-971AD / UP-991AD
FLAT PANEL DETECTOR SIZE 9” (23×23)	
Type Material	a-Si with CsI scintillator
Pixels size	179 µm
Matrix	1280 x 1280 pixels
Flat-Panel dimensions	23 x 23 cm (9” x 9”)
Digitization depth	16 bits
MTF *(RQA5, 2.5 µGy, IEC 62220-1-1)*	84 % at 0.5 lp/mm
	60 % at 1 lp/mm
	27 % at 2 lp/mm
	12 % at 3 lp/mm
DQE *(RQA5, 2.5 µGy, IEC 62220-1-1)*	68 % at 0.5 lp/mm
	60 % at 1 lp/mm
	41 % at 2 lp/mm
	27 % at 3 lp/mm
FLAT PANEL DETECTOR SIZE 12” (30×30)	
Type Material	aSi with CsI scintillator
Pixels size	145 µm
Matrix	2048 x 2048 pixels
Flat-Panel dimensions	30 x 30 cm (11.8” x 11.8”)
Digitization depth	16 bits
MTF *(RQA5, 2.5 µGy, IEC 62220-1-1)*	86 % at 0.5 lp/mm
	64 % at 1 lp/mm
	30 % at 2 lp/mm
	15 % at 3 lp/mm
DQE *(RQA5, 2.5 µGy, IEC 62220-1-1)*	62 % at 0.5 lp/mm
	56 % at 1 lp/mm
	42 % at 2 lp/mm
	26 % at 3 lp/mm

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X-RAY TUBE	
Type	Rotating (3000 / 10000 r.p.m.)
Focal spot	0.3 mm / 0.5 mm
Maximum output	10 / 34 kW
Target angle	10°
Anode heat storage capacity	300000 HU
Anode heat dissipation	104000 HU/min
X-RAY ASSEMBLY	
Type	Housing
Heat storage capacity	500 kJ
Heat dissipation	200 W C30 Housing (Standard for Surgical version, not available for Cardiovascular version) 500 W C30 housing with thermal exchanger HE30 (Standard for Cardiovascular version, optional for Surgical version) 1000 W C32 housing with thermal exchanger HE30 (Optional for Cardiovascular version, not available for Surgical version)
Total filtering	≥ 3.2 mm Al equivalent
HIGH VOLTAGE X-RAY GENERATOR	
Nominal power (IEC 60601-2-54)	20 kW @ 100 kV @ 200 mA @ 0.1 s
High frequency inverter	40 kHz
Minimum pulse width	5 ms
Max current	200 mA
ANODE STARTER CONTROL	
Intelligent Speed Control (ISC)	Smart anode rotation management system
COLLIMATOR	
Square diaphragm (lead)	For concentric, radiation-free collimation
Parallel shutters / Asymmetric shutter (lead)	For symmetric and asymmetric, radiation-free collimation, with unlimited rotation
OPERATIONAL MODES	
Pulsed fluoroscopy	
kV range	40 ÷ 120 kV
mA range	5 ÷ 35 mA
Pulse width	4 to 20 ms
Pulse rate	0.5 to 18 fps
Boost (HLC fluoroscopy)	
kV range	40 ÷ 120 kV
mA range	up to 100 mA (Snapshot mode: up to 150 mA)
Pulse width	4 to 20 ms
Pulse rate	0.5 to 18 fps
Digital Cinematography	
kV range	40 ÷ 120 kV
mA range	up to 100 mA (Cardiac mode: up to 200 mA)
Pulse width	4 to 20 ms
Pulse rate	0.5 to 18 fps (Cardiac mode: 30 fps)

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DIGITAL IMAGE SYSTEM

Applications for Surgical Model	Orthopaedics
	General surgery
	Pain management
	Other general applications
Applications for Cardiovascular Model	Cardiac surgery
	Vascular surgery
	Neurovascular surgery
Acquisition	1024 x 1024 x 16 bit – 65535 grey levels
	Image acquisition 0.5 f/s to 18 f/s; 30 f/s
	Image storage: 500000 for Surgical model / 800000 for Cardiovascular model
Image display & processing	Last-image hold
	Digital image rotation
	Horizontal and vertical image reversal
	Zoom and pan image
	Window & level, brightness tool
	Edge enhancement
	Gamma correction
	Gray scale inversion
	Recursive filter
	Digital Density Analysis (DDA): optimized gray scale visualization based on image analysis
	Preview collimator
DSA / RDM (Only for Cardiovascular)	Subtraction angiography with Pixelshift, Remask, Peak Opacification for iodine contrast (MaxOp)
	Anatomical Landmarking from 0 % to 100 %
	Manual Pixelshift function to correct Subtraction runs
	Roadmap technique, to position a catheter precisely in a blood vessel under fluoroscopy
	Roadmap on corrected subtraction Peak Opacification images to avoid additional contrast medium in angiography procedures
Text/Marker and measure tool (Optional)	Annotation, image comments, R/L marking
	Quantification with distance and angle measurements
Dose optimization	Radiation-free positioning of primary collimators through graphical display in the LIH image on the image monitor
	System-integrated FD laser aimer
Optional for Dose optimization	Tube-side laser aimer
	Dose Area Product (DAP) meter with automatic transfer of the accumulated dose into a radiation report
	Removable grid, e.g. for pediatric applications

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DICOM		
	Standard	Store
		Modality Worklist
		Print
	Optional	Storage commitment
		Modality Performed Procedure Step (MPPS)
		Query/Retrieve
		Radiation Dose Structured Report (RDSR)
UTILITY		
	Standard	BMP/AVI image storage on USB memory
	Optional	DICOM image storage on USB memory
		BMP/AVI image storage on CD/DVD
		DICOM image storage on CD/DVD
ACCESSORIES		
	Standard	Handswitch
		Two-pedal foot switch
		Source skin spacer
		Semi-rigid cable pusher on wheels
	Optional	Sterile covers for C-arm, X-ray assembly and flat detector
APPROVALS		
	This device complies with IEC and 60601-1.3 is classified as a class I device B type (class).	
	The device complies with Directive 93/42/EEC and following updates and is classified as a class IIb (annex IX, rule 10).	
	The device is an active medical device with no applied part.	
	The device complies with the requirements of the EMC regulations and in particular it is in class A.	

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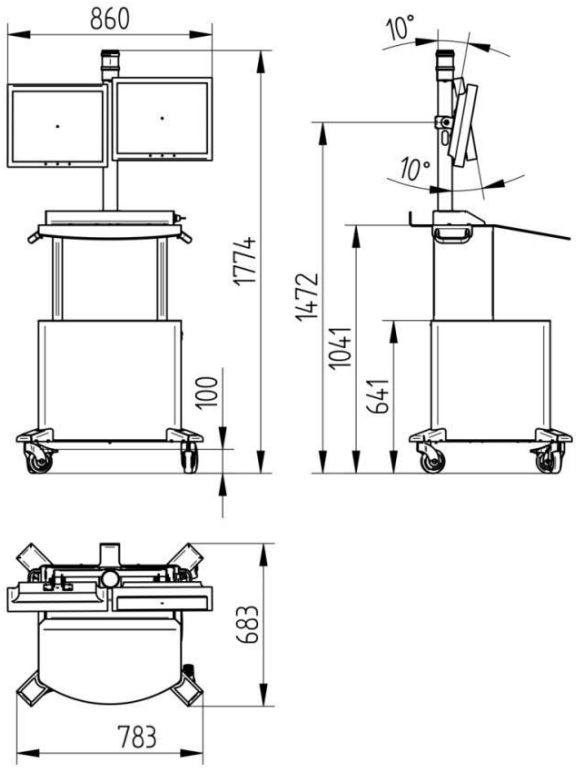
WORKSTATION | DIMENSIONS

Overall dimensions	Width 78 cm | Depth 68 cm | Height 177 cm
Weight	120 Kg



Note: Specifications are subject to change without prior notice.

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