Arcovis DRF-C R30

C-Arm unit with 30x30 Flat Panel Detector and rotating anode X-ray monoblock

Product Data

General features

Type of protection against electrical contacts	Class I
Degree of protection against electrical contacts	The system does not contain any patient applied parts
Degree of protection against water penetration	Common equipment
Degree of safety in presence of inflammable gases	Not suitable for use in presence of inflammable gases
Operating conditions	Continuous operation

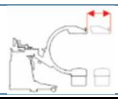
Electrical features

Single-phase voltage	230 Vac ± 10% 50Hz, 60 Hz	120 Vac ± 10% 50Hz, 60 Hz
Max consumption	Fluoroscopy, 10 A Radiography, 22 A	Fluoroscopy, 16 A Radiography, 22 A
Line resistance	Max 0,4 Ω	
Power plug	16 A - Schuko or CEE (specify when ordering)	

Environmental conditions

Working conditions	Temperature Relative humidity Pressure	10 ÷ 35 °C 30 ÷ 70 % 70 ÷ 106 kPa
Storage and transport conditions	Temperature Relative humidity Pressure	-10 ÷ 55 °C 20 ÷ 70 % 70 ÷ 106 kPa

Mechanical features – Mobile unit

Width	890 mm	
Depth	1915 mm	
Height	1612 mm (1865 mm height of the monitor at the minimum)	
Weight	315 kg	
Vertical run		450 mm Motorized at constant speed: 1 cm/s
Horizontal run		215 mm Manual

Arm rotation around horizontal axis		± 275° Manual
Orbital rotation		+95° / -65°
Arm overview (Wig-Wag)		± 12° manual (motorized in option)
Useful space		821 mm
Arm depth		707 mm
S.I.D.	1080 mm	
Focus-skin distance	220 mm	
Min distance from the floor	117 mm	
Focus-floor distance	362 mm	
Floor-skin distance	555 mm	
Rear wheels diameter	158.5 mm	
Front wheels diameter	100 mm	
Protection against cable crushing	Cable pusher on all the wheels of the mobile unit	

X-ray generator

Oscillation frequency	40 kHz
Max voltage	120 kVp
Max current in continuous fluoroscopy	6 mA @ 100 kV
Max current in pulsed fluoroscopy	50 mA @ 100 kV
Current in radiography	50 mA @ 100 kV (0,1 s) Max 100 mA
Max power in radiography	5 kW (50 mA, 100 kV, 0,1 s)

X-ray monoblock	*Passive cooling*	*Active cooling (optional)*
		
Model	I-40R 15 RF	I-40R 15 RF AC
Nominal power	20 kW	
Heat capacity	1020 kJ	
Continuous heat dissipation on C-arm	150 W (12,5 kHU/min)	270 W (22,6 kHU/min)
Continuous heat dissipation in air	130 W	250 W
Total equipment filtration	3 mm Al_{eq} @ 70 kV	
Safety overload cut-out temperature	60 °C ± 5 °C	
Max charging time for x-ray monoblock in fluoroscopy mode	53 min	87 min
Leakage radiation	< 0,8 mGy/h @ 120 kV-4 mA in fluoroscopy mode Or @ 120 kV-14,4 mAs in digital radiography mode	

Rotating anode X-Ray tube

Model	Rotating anode, IAE RTM70H
Anode material	Rhenium/Tungsten/Molybdenum
Focus dimensions	Small focus: 0.3 mm Large focus: 0,6 mm
Anodic angle	10°
Max anode heat dissipation	1300 W (48 KHU/min)
Anode heat capacity	225 kJ (76 kHU)
Nominal anode power	Small focus: 6 kW Large focus: 25 kW
Anode rotation	3000 rpm (50 Hz) 3600 rpm (60 Hz)

Collimator

Model	R650 QDASM/010D
Square field	Continuously adjustable aperture Automatic adjustment to suit detector field Manual control Max x-ray field 30 x 30 cm^2
Shutters	Continuously adjustable aperture Asymmetrically adjustable shutters Clockwise/anti-clockwise rotation, continuously adjustable Manual control
Additional X-ray beam filtering (4 possible conditions)	No filter 2 mm Al 1 mm Al + 0,1 mmCu 1 mm Al + 0,2 mm Cu

Flat Panel Detector

Model	Pixium 3030S-AU (Thales)
Technology	Amorphous Silicon Matrix
Scintillator	CsI
Format	30 x 30 cm
Effective pixel matrix	1534 x 1534 pixel
Sensitive area	Fluoroscopy Nominal field: 306 x 306 mm (1534 x 1534 pixel) Zoom Z1: 205 x 205 mm (1024 x 1024 pixel) Zoom Z2: 160 x 160 mm (800 x 800 pixel) Digital radiography Nominal field: 306 x 306 mm (1534 x 1534 pixel)
Pixel size	200 µm

Resolution (limit)	2,5 lp/mm
Max frame rate	30 frame/s
DQE @ 2 µGy, RQA5	75% @ 0 lp/mm 55% @ 1 lp/mm 39% @ 2 lp/mm
MTF	53% @ 1 lp/mm 23% @ 2 lp/mm
A/D Conversion	16 bit
Power supply	24 Vdc
Dimensions	358 x 358 x 61 mm
Weight	8,75 kg
Cooling	Passive
Detector protective element filtering	0,4 mm Al_{eq}

Anti-scatter grid

Model	ACS (JPI)
Dimensions	315 x 315 mm
Lines frequency	80 l/cm
Ratio	8:1
Focal distance	1000 mm
Interspace	Aluminum
Functioning	Removable grid without any tool
Attenuation factor (expressed as the inverse of the primary radiation transmission)	1,42

Video processor

Hardware Specs

CPU	Intel i7 – 11700 – 2,5 GHz – Rocket Lake
RAM	16 GB
Hard disk	2 HARD DISKS SSD 512GB PCIe NVMe
Operating system	Windows 10 IoT Enterprise
Video board	GeForce RTX-3060 EAGLE OC 12G
Ethernet interface board	Intel Model. I210-T1
Hard disk capacity	Min. 110000 images
I/O for the connection with the hospital network	LAN connector for DICOM network and 1 HDMI for auxiliary monitor
Interface	USB per compatible Windows printer USB for images storage on USB memory stick RJ45 for DICOM 3 Interface

Software specs

Standard DICOM classes	Store Modality Worklist Media Export, USB RDSR
Optional DICOM classes	MPPS Media Export, CDROM (burner included) Storage Commitment Query/Retrieve
Real time image processing	Reduction of quantum noise via recursive filter Motion sensitive DRC (Dynamic Range Compression), digital process to optimize image and contrast latitude Edge enhancement/reduction (sharp/smooth), with specific kernel settings (from 3x3 to 9x9 pixel) Grey scale inversion Horizontal image flip Digital image rotation (1° step) Automatic Gain Control (AGC): automatic control of the images Window and Level L.I.H. (Last Image Hold): the last acquired image saved in RAM DSA functions (optional): images subtraction, max Opacification / Road Mapping

Post-processing functions	Patient data entry Cine-loop of acquired run Contrast /Brightness control (W and L) Edge enhancement/reduction (sharp/smooth), with specific kernel settings (from 3x3 to 9x9 pixel) DRC (Dynamic Range Compression), digital process to optimize image and contrast latitude Grey scale inversion Multiframe display (max 6) Electronic shutters Virtual shutters Angle/distance measurements Text enter (free or fixed annotations) Printout using Windows compatible printer Images storage to USB memory stitck in DICOM format DSA functions (optional): mask pick-up, pixel shift, land marking, catheter calibration
User interface language	Italian, English, Spanish, German, Swedish, Danish, Norwegian, Romanian, Czech, Russian, Slovakian, Polish, Chinese

User Interface

Control panel

Technology	Multi-touch (10 points), 12,5" LCD color Full-touch operating, no needs of keyboard or mouse LIVE image and controls display
Console positioning	± 135°
Resolution	1920 x 1080 pixel
Effective display area	276,5 x 157,5 mm
Contrast ratio	1000:1
Brightness	400 Cd/m^2
Viewing angle	80°
Processor	CPU Intel Celeron N2930 (Quad Core, 1,83 GHz, 2 MB Cache)
SDRAM	4 GB DDR3L 133 MHz
Memory	32 GB SATA onboard SSD
Ethernet	2x Built-in Gigabit Ethernet LAN
Operating system	Windows 10 LTSB
Power supply	12-24 Vdc, nominal 19 Vdc

Monitor

Technology	WQHD multi-touch (10 points), medical single monitor, with the possibility to split the screen to display LIVE and REFERENCE images at the same time
Diagonal dimension	27"
Resolution	2560 x 1440 pixel (4k)
Viewing angle	178°
Height	Continuously adjustable in the range 144 -186 cm
Positioning	± 180°

	Monitor mounted on the equipment arm, adjustable in any direction
Max brightness	350 Cd/m^2
Contrast ratio	1000:1
Backlighting	LED
Power supply	110-230 Vac
Max consumption	60 W
Dimensions	651 x 402 x 69 mm
Weight	11,8 Kg

Optional devices

NFC login

Up to 10 cards for user authentication through NFC technology

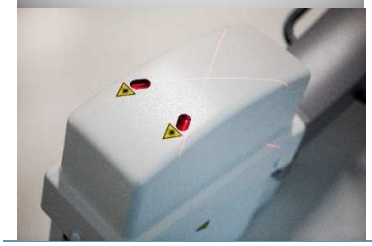
Monitor on trolley

Additional adjustable view station for 27" monitor

Monitor on wireless trolley

Additional view station on totally wireless trolley (powered by batteries), with 24" monitor and integrated WiFi receiver.
WiFi transmitter not included

WiFi- transmitter	Video Wireless transmission kit
WiFi receiver	Single Video WiFi receiver for external monitor

Double-pedal footswitch 	X-ray command footswitch connected to the unit. It is possible to assign different acquisition modes to the two pedals of the footswitch.: – As a default, the left pedal configured to manage the Low Dose Fluoroscopy mode. – The right pedal can be configured with another available preset mode according to the specific needs.	
Wireless double-pedal footswitch 	Wireless footswitch with the same features of the cabled footswitch.	
Laser localizer  	Functioning Class Laser diode power Optical output power Wavelength	The laser beam is projected on both side, on the detector and on the monoblock 1M < 5 mW 3,8 mW 635 nm
Digital printer A6 	Resolution Printout format Print speed Video	325 dp A6 – 320x100 mm 3,3 s (960x1280 dots) Full HD
DAP	Model Power supply Useful area diameter Sensitivity	KermaX plus (mod. 120-123c) DC: 12-29 V (max 50 mA) 93 mm 1 mGycm^2

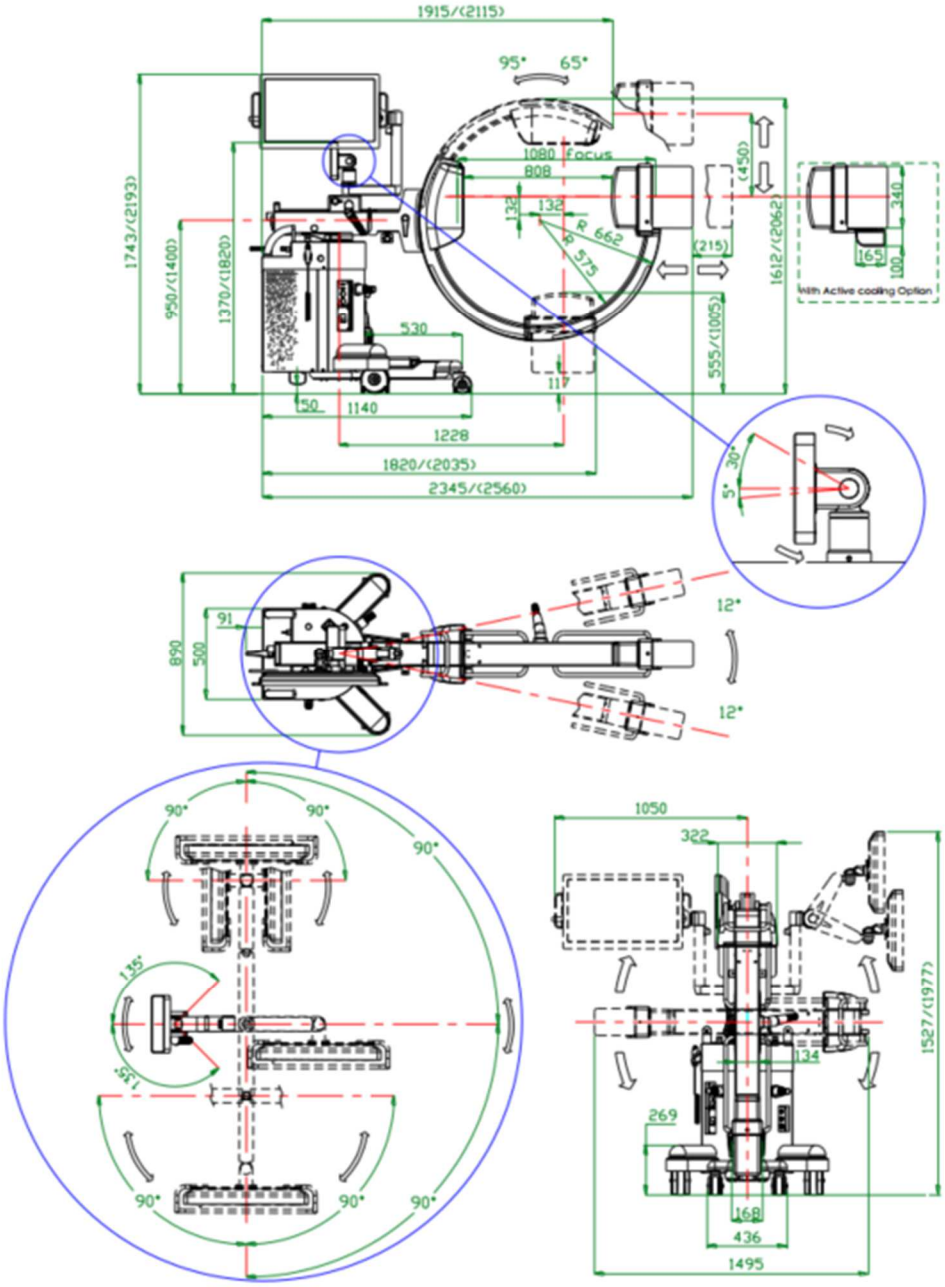
Injector interface	The system is set up to manage the start of a contrast medium injector. The function can be programmed in DSA exams and provides for the command of the device synchronized with the RX emission
External door signal lamp	The option allows to control the external lamps in the x-ray room, using wireless technology
Additional Control panel	Second operator console to be placed on the operating table. It is fixed on a mechanical stand that allows its orientation to improve the operators' view; alternatively, it can be fixed on a monitor cart. It has the same functionality as the primary Control Panel and is connected to the stand via a variable length cable
Infrared remote control	Infrared remote control for images management
Network adapter	USB network adapter, dual band WiFi, WPA&WPA2 protected access

Standards and regulations

CE 0051	CE symbol grants the product compliance to the Medical Devices Directive 93/42/EEC as a class IIb device

The system is based on ARCO FP-S model by ATS – Applicazioni Tecnologie Speciali Srl

Dimensions (quotes in mm)



Nota: Le specifiche di prodotto possono essere soggette a modifiche per garantire sempre i più alti livelli qualitativi e possono perciò variare senza obbligo di notifica.

VILLA SISTEMI MEDICALI s.p.a.
20090 BUCCINASCO (MI) – ITALY,
Via delle Azalee, 3
Tel. +39-02-488591, Fax +39-02-4881844

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