TECHNICAL SPECIFICATION

Vision V – Floor Mounted Digital X-Ray System

Art. no: 1834007

VISION V – Digital Radiography System

VISION V is the universal digital X-ray system for general radiography. With a floor mounted tube stand (FMTS) and the digital flat panel detector it enables, in combination with a patient table it enables simple, comfortable and above all safe approach for both the patient and the technologist. It is used for all kinds of radiographic exams of the patients in lying, standing or sitting position, as well as for the exams of the patients on radiolucent hospital stretchers. By it's design and technical characteristics it complies with all the technical standards of accessability also for persons with disabilities. Robust and simple design of the stand, combined with the „6-way“patient table, enables fast and easy positioning of the patient. The imaging process is extremelly simple and safe and is perforrmed in fast and comfortable way.

VISION V

VISION V digital X-ray system is composed of following assemblies and components:

1. Patient table with bucky unit and AEC
2. Wall stand with bucky unit and AEC
3. Floor mounted tube stand (FMTS)
4. Generator
5. X-ray tube, collimator and DAP
6. Anti-scatter grids
7. Flat panel detector
8. Acquisition and imaging workstation

1. „6-way“ patient table

Patient table VISION V

Elevating patient table that is a part of VISION V system has a floating tabletop. Longitudinal and transversal movements. Available longitudinal and transversal movement of the tabletop enables fine corrections of patient position.

„6-way“ patient table – technical characteristics	
Patient table with floating tabletop	✓
Electromagnetic brakes for fixing the tabletop	✓
Bucky unit with removable anti-scatter grid	✓
Length of the tabletop	228 cm
Width of the tabletop	80,6 cm
Load capacity of the patient table	300 kg
Elevation range	30 cm
Elevation range from	52 cm
Longitudinal movement of the tabletop	±450 mm
Transversal movement of the tabletop	±125 mm
Motorized bucky movement range	50 cm
AEC, 5 field chamber	✓

2. Wall stand

Wall stand VISION V

Wall bucky stand of the VISION V system enables exams of the patients in standing position with varying height of the detector from the floor. Manual vertical movement from 280 to 1800 mm. Bucky unit containing removable grid and a wireless flat panel detector.

Wall stand with bucky unit – technical characteristics	
Fixation method	Fixed to the floor and to the wall
Vertical manual movement	28-180 cm
Bucky unit with removable anti-scatter grid	✓
Electromagnetic brake	✓
Patient handles for chest PA, LAT	✓
AEC, 5 field chamber	✓

3. Floor mounted tube stand (FMTS)

Floor mounted vertical stand for X-ray tube, moving along the rails. Manual movement, electromagnetic brakes for fixing in desired position.

Floor mounted tube stand VISION V

Technical characteristics of floor mounted tube stand	
Longitudinal movement of FMTS	2540 mm
Transversal movement of FMTS	250 mm
Vertical motorized/manual travel	1530mm
Rotation around vertical axis – mechanical indexation at every 90^0	$\pm 180^0$
Rotation around horizontal axis – tube angulation	$\pm 135^0$
Electromagnetic brakes	✓
Tube side 10,1“ touchscreen console for control of system geometry, source-to-image distance display, exposition parameters (kV, mAs), AEC, APR selection and image preview	✓

4. Generator

High tension high frequency generator in VISION V system is software controlled, from the acquisition and imaging console. Generator complies with all the demands of radiography procedures. Technical characteristics of the generator are shown in the table below.

Technical characteristics of the generator, EMD RAD 65kW	
Generator power	65kW
Generator frequency	240 kHz
Exposure voltage range in 1 kV steps	40 – 150 kV
Exposure time	1-10.000ms
High speed starter	✓
Regulation range mA	10 – 800 mA
Regulation range mAs	0.1 – 1000 mAs
Selection of exposure anatomy programs (APR)	unlimited

5. X-ray tube, collimator and DAP

X-ray tube of the VISION V system is dimensioned so that there is no need for additional external cooling during the radiography procedures.

X-ray tube Varex Rad14/Leo	
Dual focus rotating anode	FI = 0.6mm and FII = 1.2mm

Anode heat capacity	300 kHU
Max. output voltage	150 kV
Tube assembly heat capacity	1.25 MHU
Manual beam collimator	Optica 20
Collimation control	Manual
Bucky Centering Light	Power LED white, adjustable luminosity
Rating	maximum 150 kVp
Collimator light luminance	160 lux
Inherent filtration, Al equivalent @ 75kV	1.2mm
DAP meter	IBA DAP KermaX Plus
DAP meter with generator interface and automatic readout in DICOM tag	✓
DAP integrated in the collimator	✓

6. Anti scatter grids

Two grids are delivered with the system with geometry that ais corresponding to the values of SID for usual radiographic procedures:

1. Dense Anti-scatter grid Al, 10:1, f 110cm

2. Dense Anti-scatter grid Al, 10:1, f 180cm

7. Digital Flat Panel Detector

Digital flat panel detector iRay Mars 1717V3	
Receptor type	Amorphous silicium
Scintilator	CsI
DQE @ 0 lp/mm	66%
DQE @ 1 lp/mm	45%
Pixel pitch	139 µm
Total image area	427 x 427 mm
Pixel matrix	3072 x 3072
A/D conversion	16 bit
Displaying of the image (preview/full image)	3s/5s
Detector type	Portable, highly sensitive
Communication	Wireless, Wifi
Detector weight (with battery)	4.6 kg
Ingress protection	IPX1
Weight capacity (distributed)	150 kg
Set containing two batteries and a battery charger	✓

8. Avanse DR Acquisition and Imaging System

Acquisition and imaging workstation Visaris Avanse DR is the integral component of the VISION V system. It is designed for centralized control of the digital radiography system. It is the control center from which the generator (exposure control, selection of anatomy program) and acqusition and imaging system (patient data, worklist import, image post-processing and DICOM operations) are controled.

Acquisition and imaging workstation

Patient imaging is performed in extremely simple way, maximally adjusted to the needs of an x-ray technologist. User interface is in customer's language. Five essential steps in workflow are:

1. Selection of patient
2. Selection of projections
3. Exposure
4. Image processing
5. Image export and publishing

DICOM Modality Worklist integration

Beside the usual way of direct input of patient data the acquisition system supports the import of modality worklists (MWL) in DICOM format from the supported MWL or PACS servers. User interface enables simple query of created MWLs by patient or modality details and their direct import in workflow.

Image processing

The system offers extrordinary post processing features for visualization of region of interest (screenshot shown in following image). Some of the basic image processing tools are:

- Histogram (selection of grayscale range for the best view of ROI);
- Horizontal and vertical image flipping;
- Zoom in or zoom out;
- Cropping of ROI;
- Measurements of distances;
- Positive, negative view;
- Exposure index display for every image;
- Magnification of details;
- Image archiving on PACS server in DICOM format etc.

Image processing

Software for optimization of image quality

Beside the usual tools for image processing, Avanse DR acquisition console provides a number of specialized advanced techniques of image post-processing. Visaris ß (Beta) algorythm enables normalization and harmonization of response of grayscale for wide range of exposure parameters thus enabling a way increased sensitivity compared to conventional and CR systems. That way the acceptable image quality, contrast and brightness is achieved in underexposed and overexposed regions. By this multi-frequency processing of X-ray image the structure of bones and soft tissue is enhanced. Predefined parameters of image processing are changeable and the chosen values can be saved.

Printing, archiving and making annotations

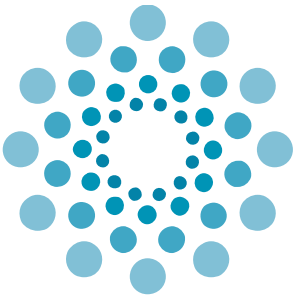
The printing module of processed images enables selection of printing media (paper or film), format of media, slection of desire display of rows and columns, and printing of images with annotations showing patienta and anatomy details, orientation, exposure parameters etc.

CD/DVD Publishing

Avanse DR acquisition and imaging system enables direct archival of obtained images on CD/DVD media in DICOM format with all the parameters of the exam performed. With every study recorded to the CD/DVD media the free DICOM viewer is enclosed, which automatically runs when the CD/DVD is inserted in any PC computer and the recorded images are displayed.

Avanse DR acquisition and imaging workstation	
High performance PC, multi core processor, min. i5	✓
RAM	8 GB
Hard disk drive 500 GB, with capacity of more than 15.000 images	1 TB
Display size	23”

Display resolution	Full HD
DVD RW for export of images in DICOM format	✓
Operating system	Windows
DICOM 3.0 MWL SCU import of modality worklists	✓
DICOM 3.0 Store SCU export to PACS	✓
DICOM 3.0 Print SCU print to DICOM printer	✓
DICOM 3.0 Query, Retrieve, MPPS, Storage commitment	
Tools for image processing: zoom, contrast, brightness, rotate, flip, inverse, magnification	✓
Algorithm for automatic harmonization	✓
Advanced tools for image processing with enhanced visualization of bones and soft tissues	✓
Integration with PACS and RIS enabled	✓
Image printing on paper or film	✓
Image archival and export in DICOM format	✓
Image publishing on CD/DVD media in DICOM format with free DICOM viewer	✓
Annotation tools	✓
Dose SR	✓



VISARIS

VISARIS D.O.O. BEOGRAD | Batajnicki drum 10 deo 1B | 11080 Zemun | Srbija
T: +381 11 2017 650 | F: +381 11 2017 670 | M: +381 65 2017 650
E-mail: info@visaris.com
www.visaris.com