Amadeo X-ray Systems

Digital radiography

with the fully motorised **Amadeo Z-DR** complete X-ray system

For small rooms with a low ceiling height

Amadeo DR complete X-ray system for digital X-ray imaging

Amadeo Z-DR

Fully motorised all-round unit for low ceiling heights

Are you looking to invest in a high-performance, fully motorised and universal X-ray system and benefit from the many advantages of digital X-ray imaging? Is it important for you to find a compact system which is also easy to install and operate? The **Amadeo Z-DR** system encompasses all the necessary components and functions for digital X-ray imaging without cassettes: automated U-arm system, generator, flat panel, PC and the ***dicom****PACS*®***DX-R*** acquisition and diagnostic software.

This **Amadeo** system is a space saving solution for low ceiling heights. The optimised work flow reduces the number of process steps, saving you time as well as personal and financial resources.

The **Amadeo Z-DR** is a fully motorised DR system. The U-arm can be positioned easily and within seconds. The stand is equipped with four electric motors for precise and effortless positioning. The system caters for patients in a sitting, standing or prone position (table is optional). The sophisticated design allows alignment between the collimator and the digital receptor in any position.

The ***dicom****PACS*®***DX-R*** control console includes all the functions required to operate the X-ray system: from controlling the X-ray generator to capturing the complete high-quality image ready for diagnostic evaluation. All the necessary adjustments can be made from one single control console. In addition, the integrated multimedia X-ray positioning guide provides numerous hints on the correct adjustment technique and the positioning of the patient.

Amadeo DR complete X-ray system for digital X-ray imaging

Benefits

Digital X-ray imaging with **Amadeo Z-DR**

Unique

Manual operation of the system is available at any time, even if motorised operation should fail.

Your advantage: There is always an alternative.

Low ceilings

The compact construction of the system allows installation down to a ceiling height of approx. 2.40 m (the stand can be adjusted to the maximum room height available). The maximum space required for rotating the fully extended U-arm is approx. 2.90 m.

Your advantage: Even with a ceiling height as low as 2.40 m the system is fully functional.

Excellent image quality

The standard high-quality direct radiography detector operating on the basis of a caesium-iodite (CsI) scintillator provides excellent quality even in the case of low X-ray dose parameters.

Your advantage: In particular when comparing images directly to the commonly used GadOx (Gd^2O^2S:Tb) detectors, this enhanced quality is clearly visible.

Fast and fully motorised

The U-arm can be positioned simply and within seconds. The stand is equipped with four electric motors for precise and effortless positioning. The X-ray image is available for viewing and diagnosis within 6 – 8 seconds after the exposure is triggered.

Your advantage: Fast work flow with optimal documentation.

User-friendly

The professional ***dicom**PACS*®***DX-R*** acquisition software appeals through an intuitive and modern graphical user interface. Examinations may be conducted comfortably at the monitor while all the necessary adjustments of the X-ray parameters are automatically communicated to the generator.

Your advantage: you work with only one control console.

Safety

The system is equipped with extensive active and passive safety mechanisms. Close proximity sensors can be added to rule out collisions with users and patients.

Your advantage: Safe operation with optimal patient protection.

Cleverly designed

By making use of a 43cm x 43cm detector, the extra effort of rotating from vertical to horizontal images is no longer necessary. When the grid is removed, it is, of course, also very easy to take images of extremities etc.

Your advantage: No extra effort is required to rotate the detector.

Software

Advantages of the professional ***dicom****PACS*®***DX-R*** X-ray acquisition software

- Modern graphical user interface (GUI) adaptable to almost **any language**
- Capture of patient data via **DICOM Worklist, BDT/GDT, HL7** or other protocols – data may also be captured manually
- Use of **DICOM Procedure Codes** for the transfer of all relevant examination data directly from the connected patient management system (HIS/RIS)
- **Freely configurable** body parts with more than **200 projections** and numerous possible adjustments
- Safe and fast **registration of emergency patients**
- Allows the user to **switch between examinations** of a patient, for instance to avoid having to re-position the patient frequently
- Allows the user to **subsequently add images** to an examination, even after that examination has already been completed
- Integrated **measuring, special image filters and many other tools** for measuring and image optimisation
- Entry of recurring **examination procedures as macros**, e.g. thorax screenings
- **Fully integrated radiographic positioning guide** for each examination in human and veterinary medicine incl. comprehensive notes, photos, videos and correct X-ray images
- A single work station with installed ***dicom****PACS*®***DX-R*** software may be upgraded by the following options (selection):
  - Tools for taking images of an entire leg (full spine) or an entire spine **(image stitching)**
  - Planning and working with **digital prostheses templates/ operation planning**
  - Connection of several diagnostic monitors
  - Capturing additional patient and examination data and their freely configurable statistical evaluation

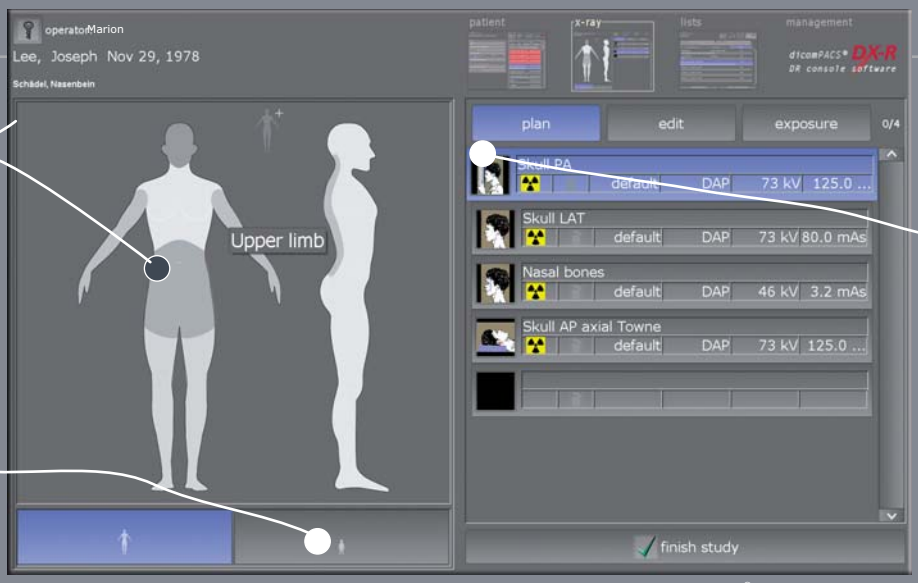
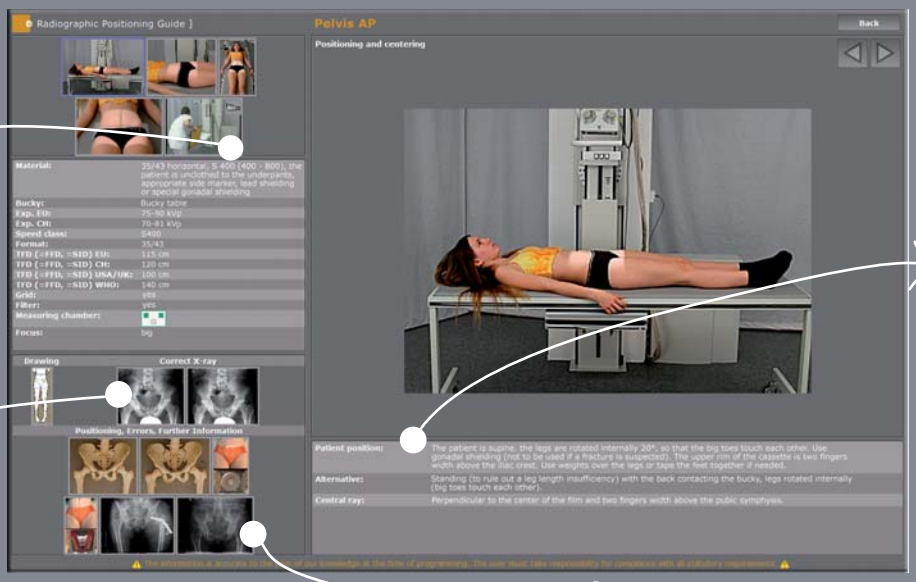


Chart for the planning of an individual X-ray job

The correct settings for adults and children at a mouse click

Switch to the planning of X-ray jobs for children

***dicom**PACS®**DX-R** job creation*



Video with sound for the step by step positioning of the patient

Presentation of helpful hints for the positioning of the patient, central beam, tips and tricks, frequent errors etc.

Shows an example of a correct X-ray image

***dicom**PACS®**DX-R** radiographic positioning guide*

Opens examples of inaccurate X-ray images with comments

Previews of the current X-ray image

*Preview of the X-ray image and worklist in **dicom**PACS®**DX-R***

Image processing

Automatic image processing for optimal quality

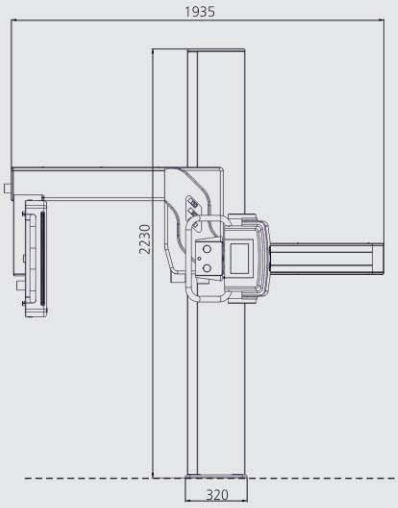
- Perfect images at all times - generally **no adjustment** required
- Integrated software for **automatic image optimisation**
- Professional, **adaptable image processing** for each individual examination to obtain best possible image settings for the needs of each customer
- Due to specially developed processes, the image processing allows the user to **vary the X-ray settings on a large scale** while the image quality remains virtually the same (**possibility of reducing the dosage**)
- **Bones and soft tissue** in one image - this enables the user to significantly improve his diagnosis
- **Details of bones and microstructures are very easy to recognise**
- Noise suppression
- **Black mask** (automatic shutters)
- Automatic **removal of grid lines** when using fixed grids

*Exposure with **standard** image processing*

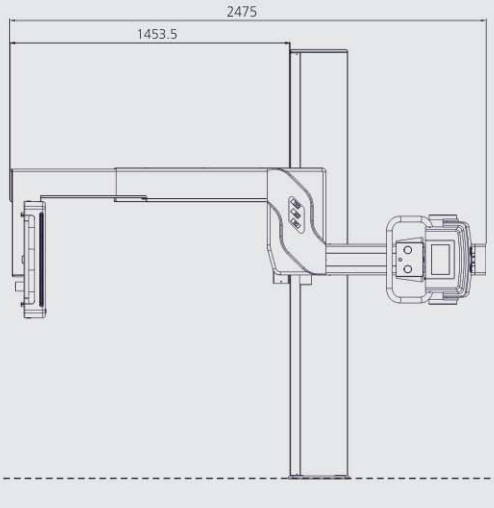
*Exposure with **dicom**PACS®**DX-R** image processing*

Measurements universal radiographic system

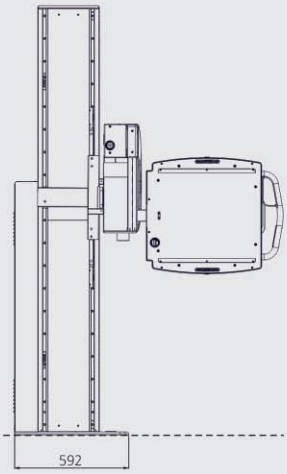
Front min.



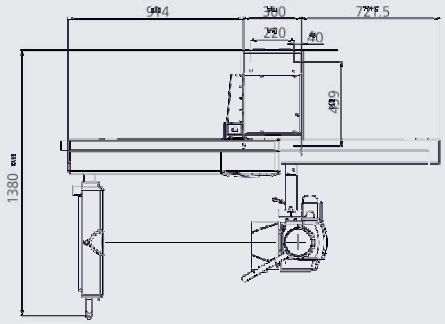
Front max.

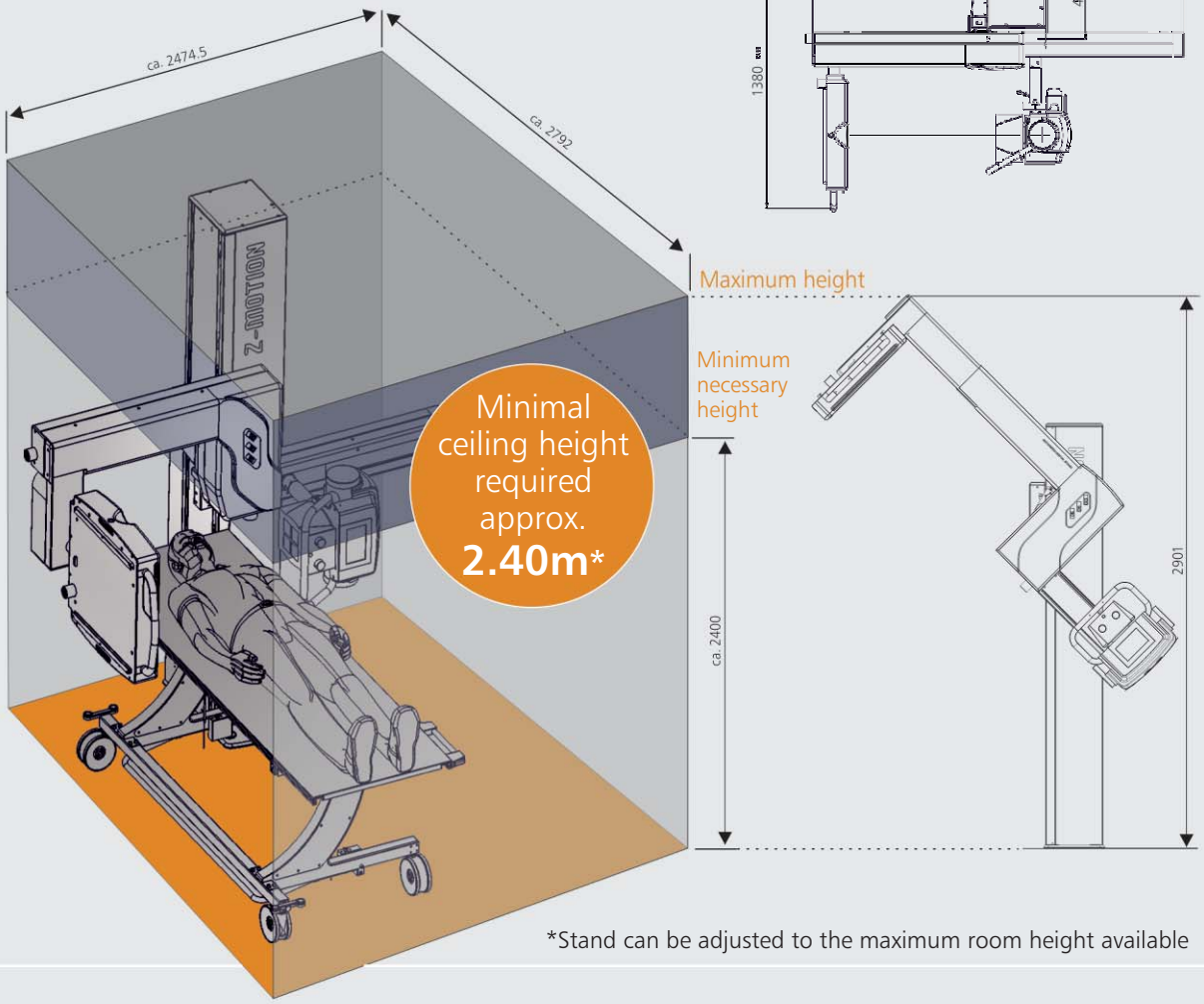


Profile



Top





Maximum height

Minimum necessary height

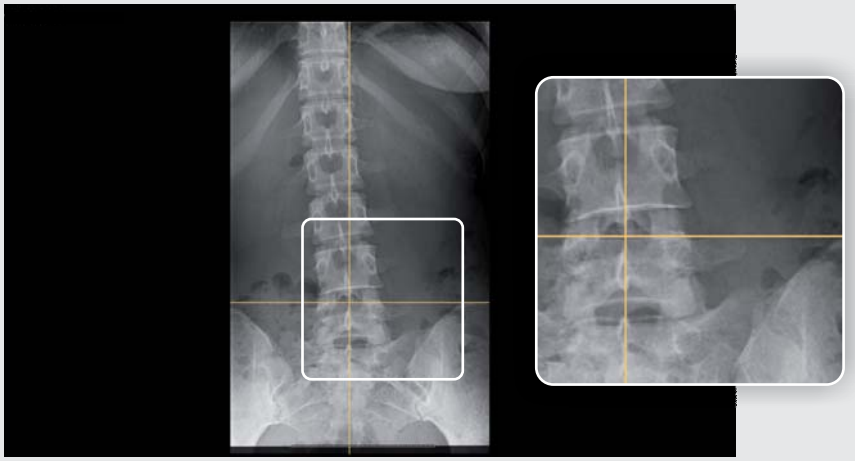
*Stand can be adjusted to the maximum room height available

Special Chiro Tools

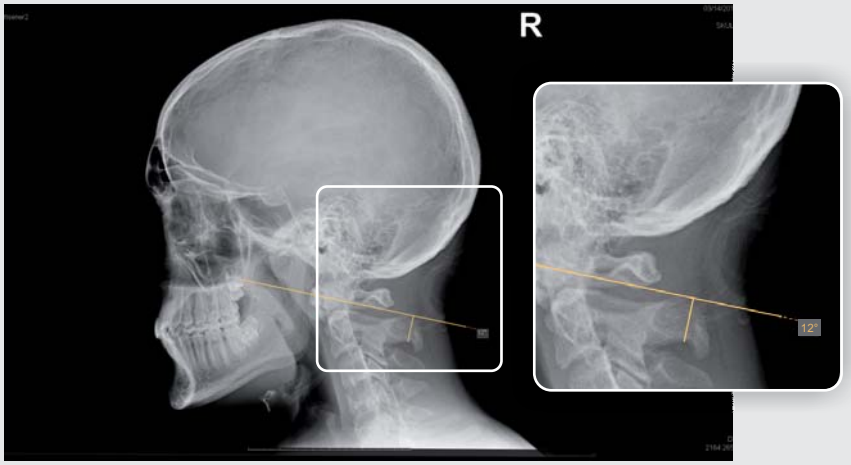
Diagnostic tools for optimal diagnosis

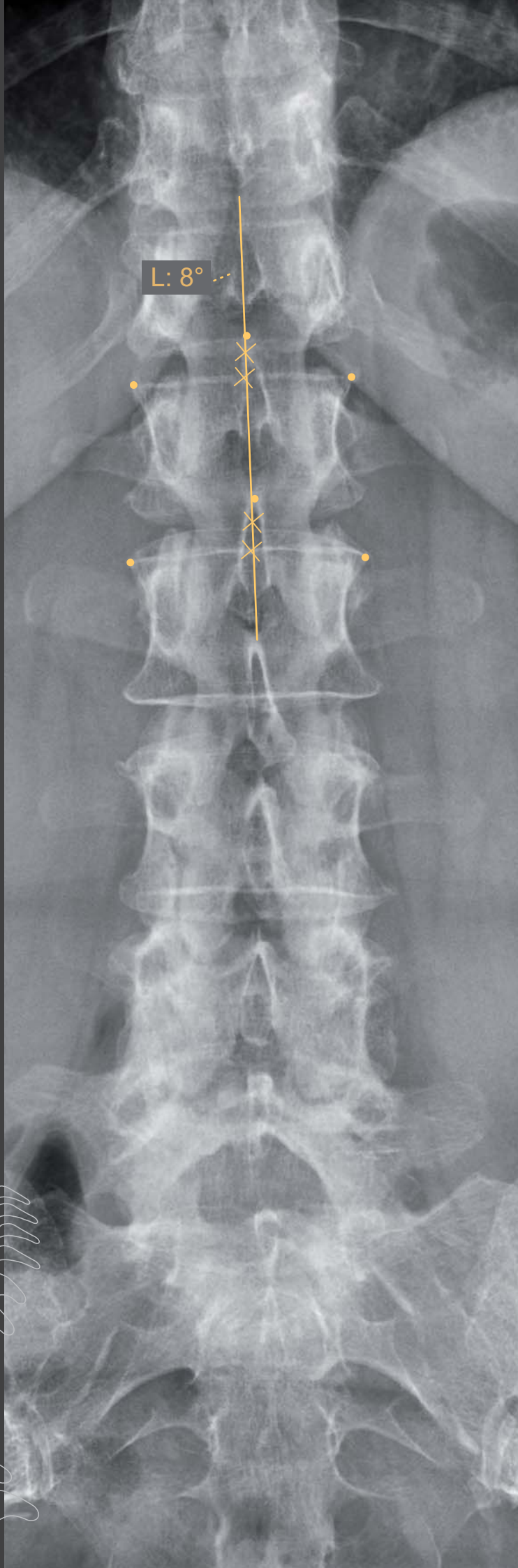
The Chiro Tools have been developed in cooperation with experts from the USA and Canada and offer great possibilities for diagnosing accurately as well as for planning further treatment. According to the tool used, automated center lines and points, defined curves, angle measurements etc., are generated after the manual selection of the points of interest.
Of course all the standard tools (like distance measurement, angle and Cobb angle, mark spots etc.) are also included.

Axis line
The tool creates a vertical or horizontal axis, depending on the direction, in which the mouse pointer is moved.



Orthogonal line
This tool is used to mark perpendicular lines on existing or yet to be drawn baselines. The divergence from the x/y-axis (nearer axis) is displayed by default.

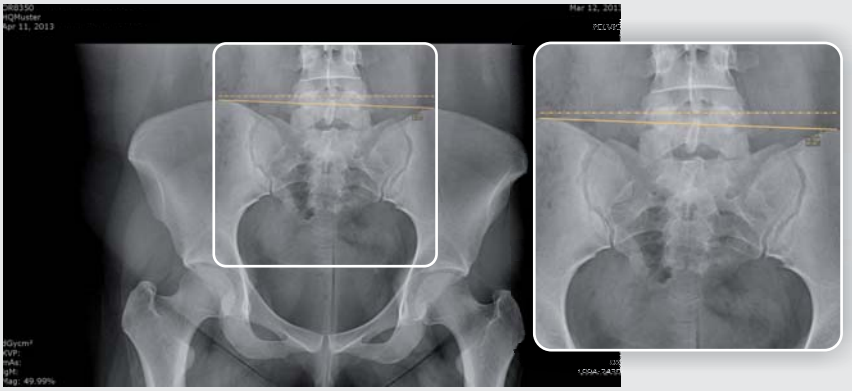



L: 8°

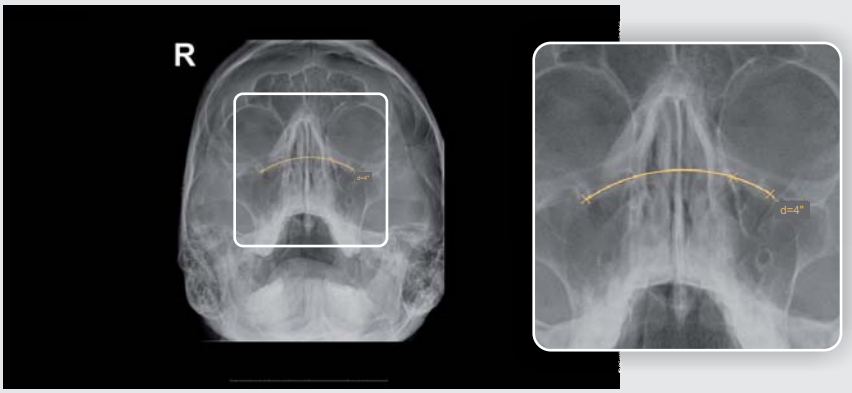
Chiro tools

George's line
This tool is used to draw vertical lines on each vertebra along the spine in a lateral view and to calculate their distances (in mm or inch).

Horizontal or vertical level
This tool calculates the horizontal or vertical level. By default the nearer axis is used for calculation.

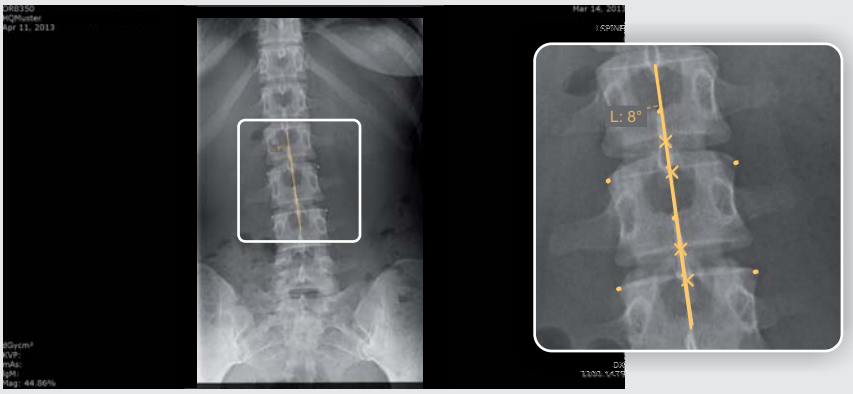


Circumscale
An arc is drawn through three defining points and the diameter of the corresponding circle is displayed by default.

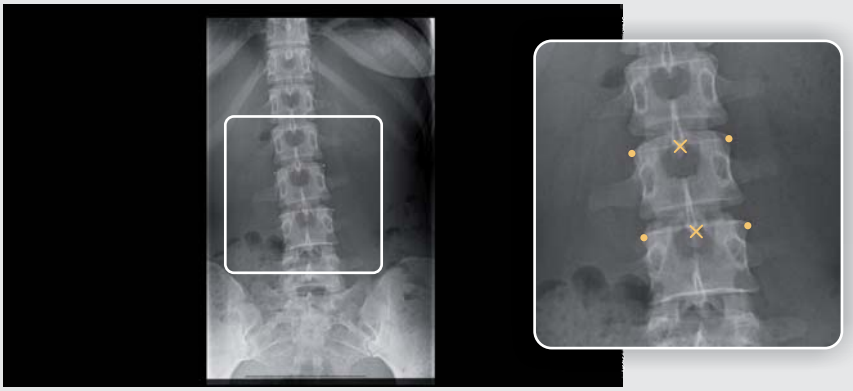


Spinal curve
This tool is used to draw an arc in the lateral view of the spine. The annotation uses a fixed radius set by default to 220 mm. Radius or degree can be adjusted manually.

Vertebrae line
This tool generates a vertical line of six points (2x3) along the spinal canal and displays the lateral divergence and side of laterality in degrees.

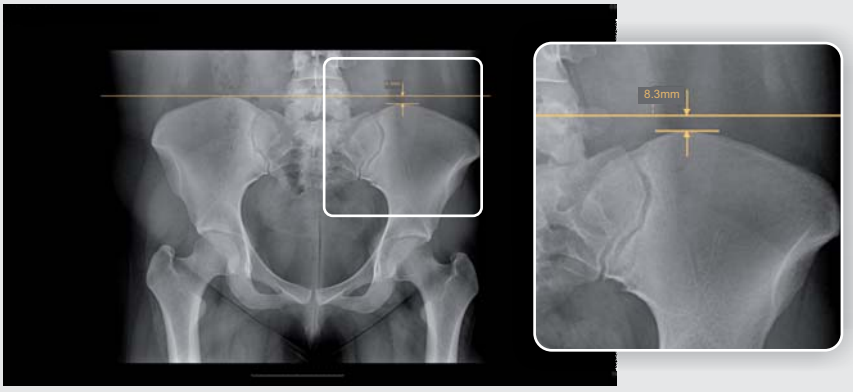


Center point
This tool calculates the center point between two points.



Distance comparison
This tool compares the distances between three set points (between point 1and point 2 and between point 2 and point 3) and shows the larger distance.

Pelvic obliquity
This tool is a measurement that is calculated automatically after two simple clicks which generate two horizontal lines showing the distance between these two parallels.

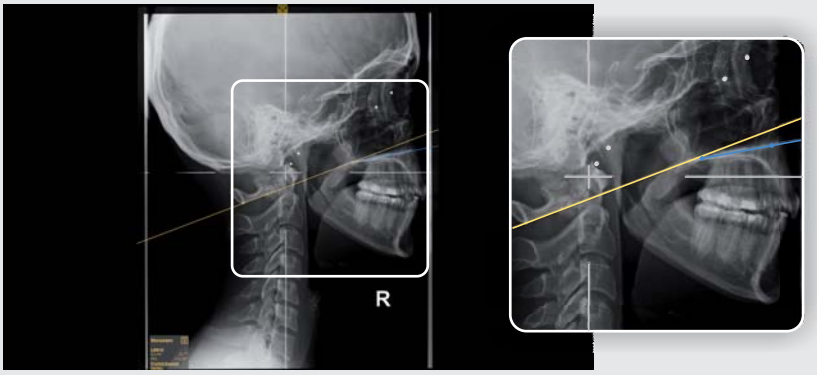


Special Tools

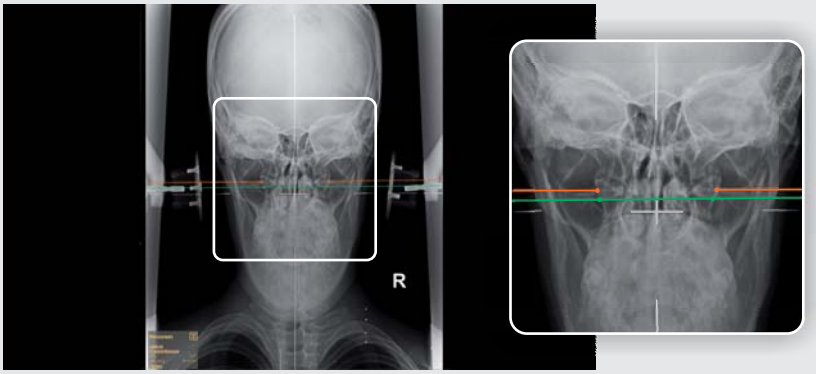
*dicom*PACS® Diagnostic tools for Upper Cervical Chiropractic

The Upper Cervical Chiropractic tool set has been created in cooperation with leading experts from the US and Canada. It offers a variety of ways to reach a fast and accurate diagnosis. Templates like the Cephalometer, Grid, Circumscale, and Relatoscope enable you to continue working as you are used to.

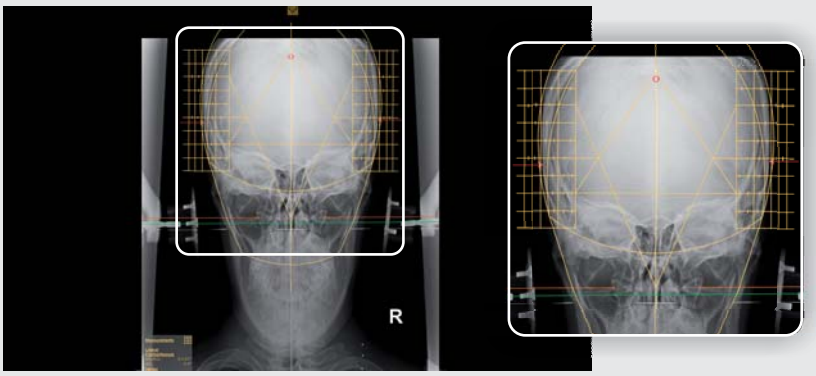
S-Line and Hard Palate Line and Raw Data Box
You simply set two points each on C1 and the hard palate to create the S-Line and the Hard Palate Line. We will show you the horizontal angles. All measured values will be shown in the raw data box. You can also show and hide values manually.

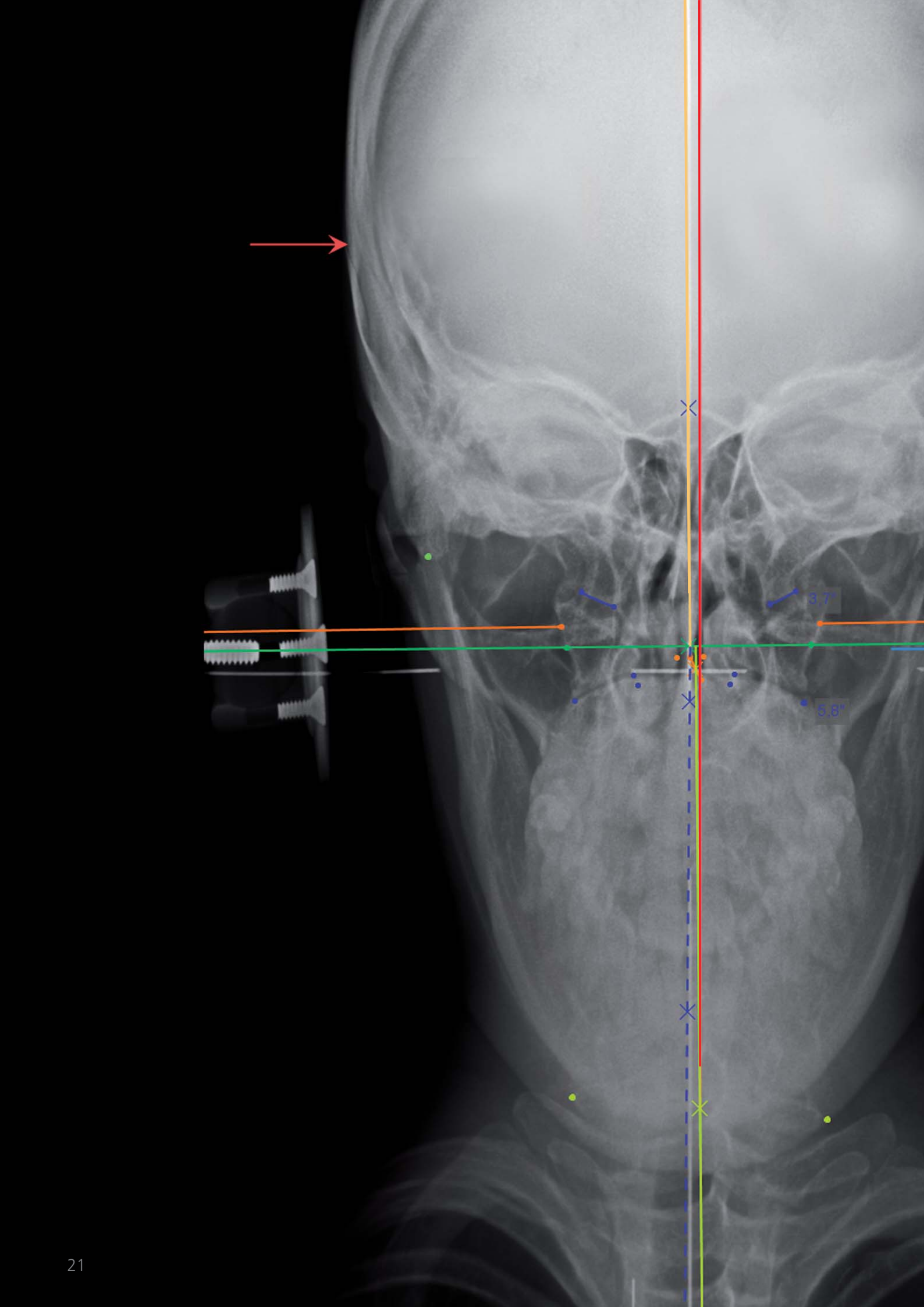


Atlas Plane Line and Atlas Check Line
The horizontal angle and the angle between Atlas Plane Line and Atlas Check Line will be shown in the raw data box.

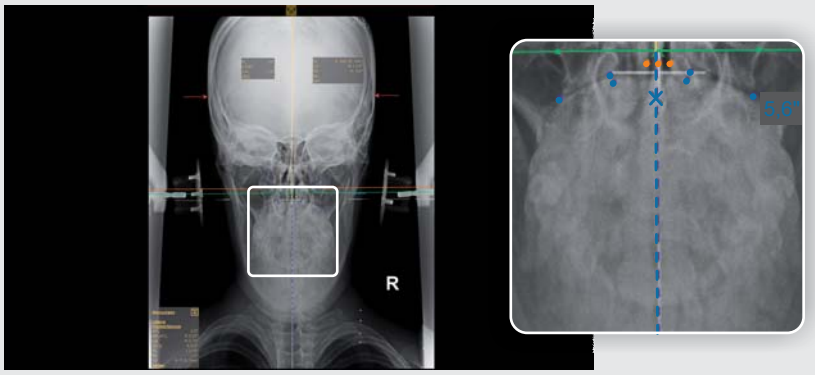


Cephalometer and Central Skull Line
Use the Cephalometer to draw the Central Skull Line. Laterality and Skull Tippage will be calculated automatically. The Four Elements and Listing Information will be inserted and are completely editable.

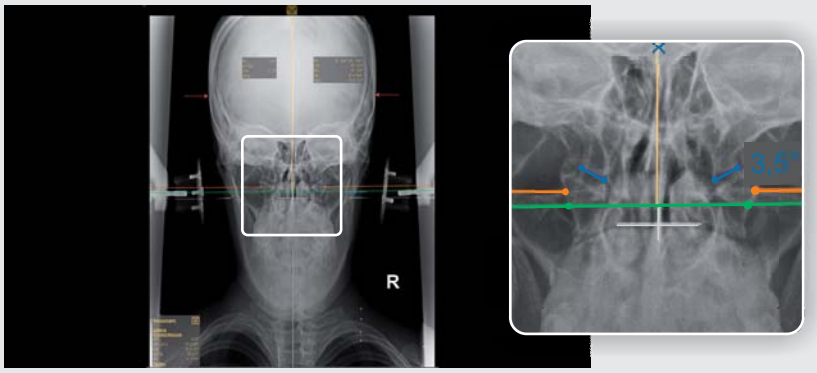



3,7°
5,8°

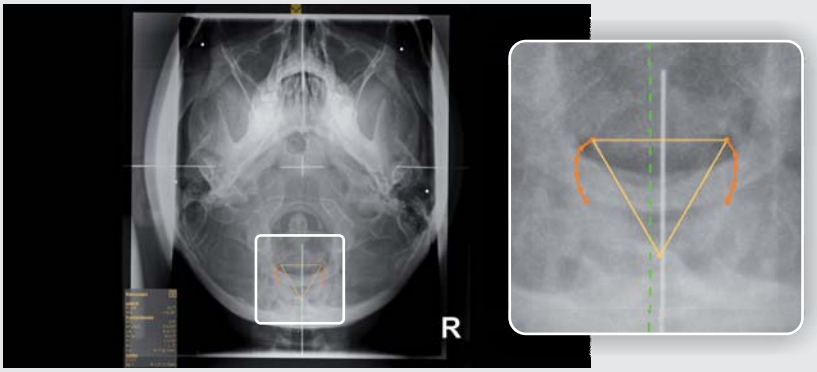
Axial Circle
The Body Center Line will be set automatically and the Axial Circle will be calculated and shown on the side of laterality. You can set the calculated measurement manually to the value you prefer.



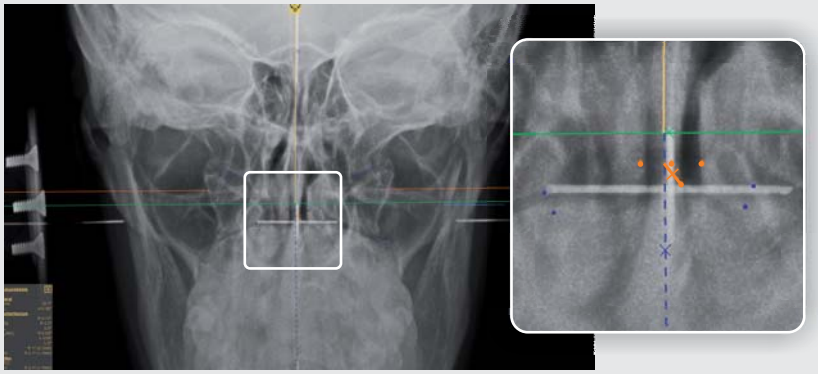
Condylar Circle
Choose between the three point and four point Condylar Circle. The middle point will be shown. You can set the calculated measurement manually to the value you prefer. The Relatoscope will use the shown value.



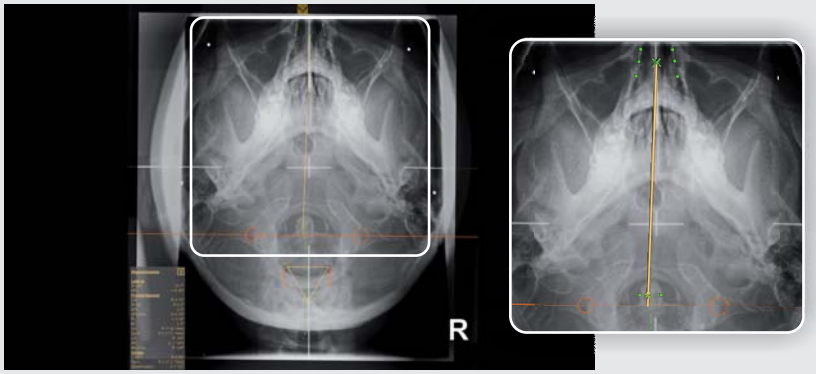
Odontoid Center and Vertex Square
Mark the lateral aspects of the dens and the Odontoid Center Line will be inserted. After marking the C2 canal, the Vertex Square will be inserted and the Spinous value will be calculated depending on the Condylar Circle.



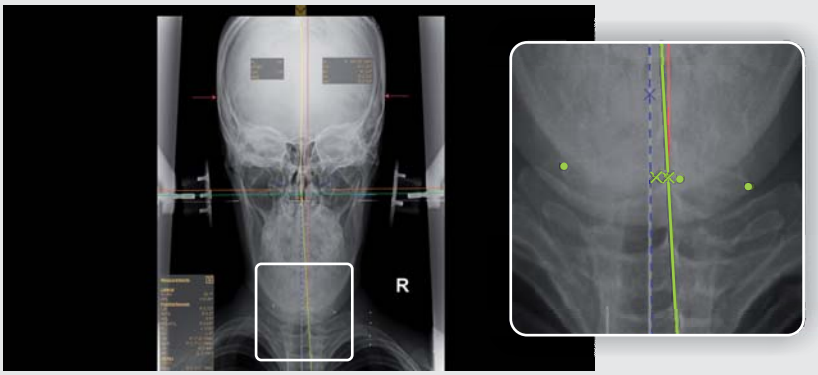
Odontoid, Spinous and Relatoscope
Use the Relatoscope to apply the Spinous value from Vertex to Nasium View. Mark the lateral aspects of the dens and the (corrected) Odontoid will be inserted automatically.



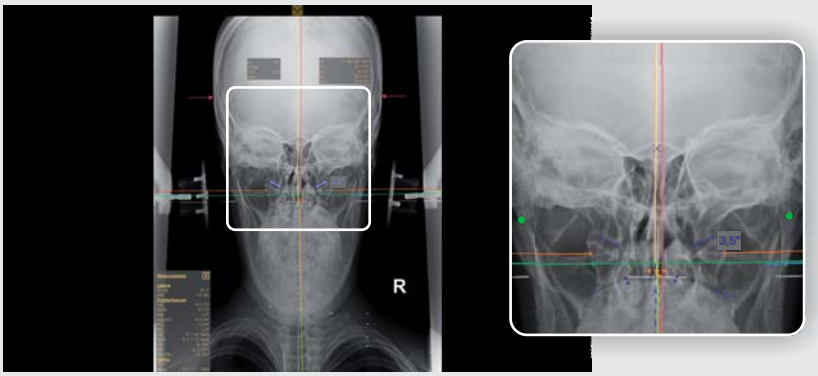
Vertex Skull Line
After marking the nasal structures, click the Inferior Point button. The point will be set automatically depending on the Listing Information value and the Vertex Skull Line will be inserted. Atlas Rotation will be calcuated.



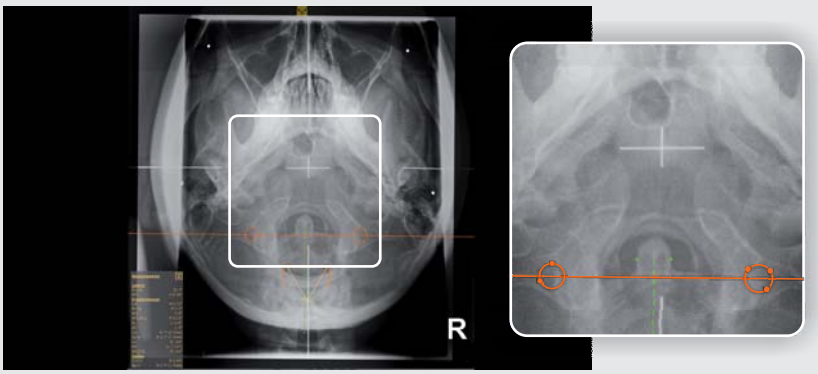
Lower Angle and Angular Rotation
The Lower Angle and Angular Rotation will be calculated automatically after setting the Inferior Point. You can also set a corrected Inferior Point.



Intermastoid Line
Mark the inferior tips of the mastoid processes. The measured value, its orthogonal divergence from the Central Skull Line, will also appear in the raw data box.



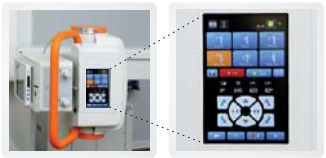
Vertex Atlas Line
After marking the transverse foramina of the atlas with three points each, we will draw the Vertex Atlas Line and show the convergence of C1 and C2.



Delivery includes

The **Amadeo-Z** systems includes the following components:

Components	**Amadeo Z-DR** DR system with integrated fixed flat panel	**Amadeo Z-AX** System for film/ CR cassettes without generator control	**Amadeo Z-DRw** System with CR cassettes/ wireless flat panel with generator control
50 KW HF generator	✓	✓	✓
Measuring chamber (AEC field)	✓	✓	✓
Motorised U-arm system ▪ *compact construction to a ceiling height of approx. 2.40* ▪ *fully motorised and manual operation* ▪ *accurate positioning in a few seconds* ▪ *adjustable SID: 100 to 200 cm (39,5 bis 79")* ▪ *motorised movements: 4 movements with electric brakes and clutches* ▪ *vertical motion range: 125 cm (47,25")* ▪ *arm rotation: -45 to +135 degrees* ▪ *FP detector tilt: -45 to +45 degrees* ▪ *X-ray tube rotation: range -90° to 90°* ▪ *manual movement: counterbalanced vertical and rotational movement in most positions* ▪ *total assembled weight: approx. 400 kg (880 lbs) depending on accessories* ▪ *tube side control: 7" wide screen LCD with automatic image rotation* ▪ *manual controls: fully configurable brake release switches at detector and tube side*	✓	✓	✓
Automatic patient positioning *(integrated in the U-arm system)* *The motorized automatic patient positioning is operated with a user friendly touch screen. The number of programmes and their positions may be defined during installation.*	✓	✓	✓
X-ray tube 150 kVp *standard: 0.6/ 1.2 mm focus, 18/50 kW, 300 kHU 12 degree target angle*	✓	✓	✓
Manual Collimator	✓	✓	✓
Motorised bucky with removable grid	✓	✓	✓
Grid for SID 86 to 112 cm	✓	✓	✓



Components	Amadeo Z-DR	Amadeo Z-AX	Amadeo Z-DRw
Grid for SID 100 to 180 cm	✓	✓	✓
Flat panel detector 17" x 17" CsI *Detector with excellent image quality and immediate image availability* 	✓	-	-
Flat panel detector 14" x 17" wireless *Wireless X-ray imaging! Fits into an existing X-ray system without requiring modification (in conformity with the X-ray film cassette), fast-charging, long-life batteries* 	-	-	✓
Operation by ***dicom**PACS*® ***DX-R*** acquisition station *Mini PC with 19" touch screen monitor,* ***dicom**PACS*® ***DX-R*** console software with modern graphical user interface including basic software package 	✓	-	✓
Operation by generator console	-	✓	-
Optional components to upgrade the Amadeo Z system:			
DAP meter (Dose Area Product meter)	●	●	●
Upgrade from 50 KW to 65 KW	●	●	●
Upgrade from 50 KW to 80 KW	●	●	●
Remote Control (Bluetooth) for U-arm system	●	●	●
Stitching (Stand)	●	●	●
Motorised collimator without filter exchange	●	●	●
Motorised collimator with filter exchange	●	●	●
LWS/ BWS filter - to replace manual	●	●	●
Patient positioning table I *Mobile patient table with power-driven height-adjustment,* Dimensions L/W/H: 2300/ 753/ 580-890 mm Weight: 123 kg Max. patient weight: 225 kg X-ray transparent area: 2296 x 588 mm Attenuation equivalent 100 kv: <0,75 mm AL 	●	●	●
Patient positioning table II *Light and flexible patient table,* *Dimensions L/W/H: 2000/700/760 mm* *Max. patient weight: 150 kg* *Rollers are equipped with block brakes* 	●	●	●

Version 001_09_2014

Portfolio

Overview - products of OR Technology

Medici DR Systems

DR retrofits - digital upgrade set for existing X-ray systems incl. ***dicom**PACS®**DX-R*** acquisition software, also available for stationary and mobile X-ray machines

Leonardo DR Systems

DR suitcases - compact suitcase solutions for mobile and portable X-ray incl. ***dicom**PACS®**DX-R*** acquisition software

Amadeo X-ray Systems

Complete digital X-ray systems (incl. stand, bucky, generator, flat panel incl. ***dicom**PACS®**DX-R*** acquisition software etc.) as well as mobile and portable X-ray solutions

Divario CR Systems

CR solutions - CR systems for digital X-ray with cassettes incl. ***dicom**PACS®**DX-R*** acquisition software

X-ray Accessories

Accessories for X-ray
(e.g. radiation protection walls, gloves etc.)

dicomPACS®

Image management (PACS) - comprises acquisition, processing, diagnosis, transfer and archiving of image material

ORCA

Cloud-based archive solution - safe, long-term archiving of patient data with intelligent usage of internal databases, communication platform with colleagues and specialists and transfer of image data to patients

dicomPACS® DX-R

X-ray Acquisition Software

X-ray acquisition software [only for OEMs] - acquisition and diagnostic software for X-ray images from flat panels or CR systems

OR Technology
Digital X-ray and
Imaging Solutions

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