



Divario CR Systems

Digital X-ray with familiar cassette handling

Divario CR-T2 for standard X-ray examinations and

Divario CR-Tm for examinations with a resolution of up to $50\ \mu\text{m}$ for practices and clinics



Extremely
fast
desktop unit
with a maximum
throughput of
73 cassettes
per hour

CR desktop unit **Divario CR-T2** + **Divario CR-Tm**



Approx

39 kg

Dimensions:

56 x 54 x 39.2 cm



Divario CR-T2



Divario CR-Tm

Compact desktop units with high throughput for excellent X-ray images

The **Divario CR-T2** and **Divario CR-Tm** are CR desktop systems with a maximum processing capacity of 73 cassettes per hour. In this high-speed mode (5 pixel/mm), the throughput is increased by almost 70 % compared to previous CR systems. The **Divario** is easy to operate, reduces patients' waiting time and increases the efficiency of the examination process. The desktop system, available in an unobtrusive compact design, can be placed wherever space is limited – on a desk or a shelf. In addition the **Divario CR-Tm** version offers high resolution images with a pixel size of up to 50 μm .

Together with the professional image acquisition software **dicomPACS®DX-R**, the CR system offers all necessary image processing tools. The solution can be adapted to fit specific clinical purposes. It is also ideal as a secondary or backup system where there is already a DR or CR in place.

The **dicomPACS®DX-R** software in particular allows quick and easy working. Special emphasis was placed on maximum image quality and maximum flexibility. For example, the included professional image processing software **dicomPACS®DX-R** can be adapted very easily to the doctor's specific wishes or requirements for each X-ray examination. The user is not limited to the selection of „pre-set“ standards. This functionality provides the best possible image quality in accordance with the doctor's needs.

The creation of the best possible images, however, also requires the correct setup of the X-ray unit and the correct positioning of the patient. To help the X-ray assistant with this task, a multimedia radiographic positioning guide for each examination has been integrated directly into the system. It allows the user to verify, prior to taking the X-ray how to correctly set up the X-ray image. Even videos on the positioning of a patient etc. are included. This guide removes the need for radiographers to consult tables, reference books or external software programmes.

Highlights

All the benefits of the **Divario CR-T** at a glance



- Space-saving desktop unit, for shelf space and shelves (floor space 0.30 m²)
- Stable high-quality images
- Very high resolution of 50 μm (**Divario CR-Tm** version)
- Maximum processing capacity of 73 cassettes (18 x 24 cm) per hour
- Also for mobile use

Image plate cassettes for high image quality



For **Divario CR-T2** following cassette formats are available:

IP cassette type CC:

- 35 x 43 cm (14" x 17")
- 35 x 35 cm (14" x 14")
- 24 x 30 cm (10" x 12")
- 18 x 24 cm (8" x 10")
- 15 x 30 cm (6" x 12")



In addition, the following cassette formats and types are available for the **Divario CR-Tm**:

IP cassette type CH:

- 24 x 30 cm (10" x 12")
- 18 x 24 cm (8" x 10")

Fit for mammography

optional

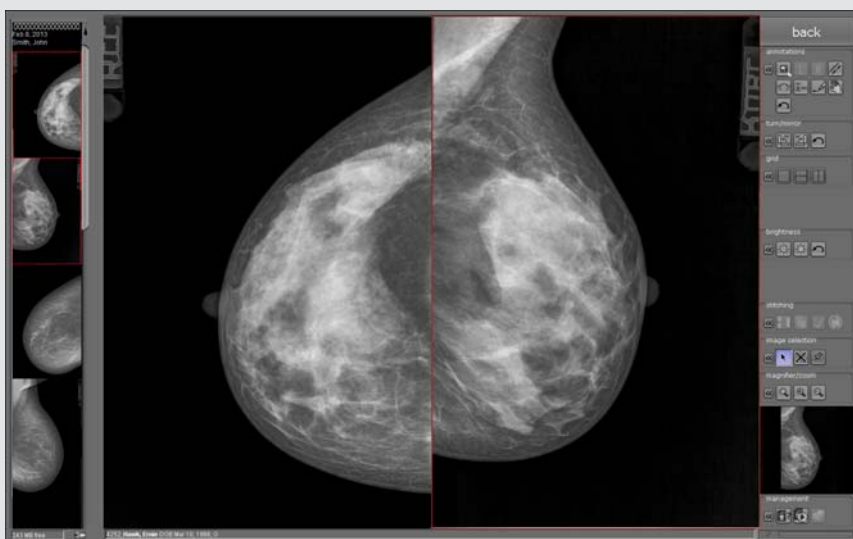
Divario CR-Tm: High resolution images with a pixel size of up to 50 μm

Extended acquisition functionality for use in mammography*:

- Specialised organ tree
- Mammography Hanging Protocols
- Documentation of additional examination parameters such as filter, thickness, angle, implant
- Mammography tools in the console viewer:
 - 100% magnification
 - Mammo inversion function
 - Mammo grid function (quadrant diagnosis)



Job creation with specialised mammography organ tree



Fully integrated viewer for diagnosing with specialised mammography tools

*Pending CE and FDA conformity approval for the module.

Software

Benefits of the professional *dicomPACS*[®] *DX-R* X-ray acquisition software

- Modern graphical user interface (GUI) adaptable to almost **any language**
- **Touchscreen** operation - to ensure quick and efficient work and a smooth workflow
- 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 already included (not suited for mammography)
- 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 measurement, special image filter and various other tools for measurement and image optimisation
- Registration of recurrent examination procedures as macro, e.g. thorax screenings or BG-examinations
- **Fully integrated radiographic positioning guide** for each examination incl. comprehensive notes, videos, photos and correct X-ray images
- The digital X-ray system can be controlled via **wireless remote control** including display of the work list, image preview and much more

Benefits of flexible image acquisition

- The **configurable generator interface** enables the user to control X-ray generators or X-ray systems by different manufacturers, delivering the generator settings directly from the software
- Option for the **parallel operation of a flat panel and a CR system** included in the standard package. The user has the choice to take the next image with either the flat panel or the integrated CR system. This flexibility also provides an **excellent emergency concept** in case of a defect flat panel.
- Integration of **dose area product meters (DAP)** - the readings are saved directly to the relevant image
- **AEC** (Automatic Exposure Control) and **ARP** (Anatomical Programmed Radiography) allow the user to **automatically adjust all X-ray options** for each projection with an option to subsequently edit the image manually
- Electronic X-ray log



Operation

of the acquisition software

The correct settings for adults and children at a mouse click

Chart for the planning of an individual X-ray job

Switch to the planning of X-ray jobs for children

operator: Marion
 patient: Lee, Joseph Nov 29, 1978
 Schädel, Nasenbein

plan edit exposure 0/4

Skull PA	default	DAP	73 kV	125.0 ...
Skull LAT	default	DAP	73 kV	80.0 mAs
Nasal bones	default	DAP	46 kV	3.2 mAs
Skull AP axial Towne	default	DAP	73 kV	125.0 ...

finish study

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

Shows an example of a correct X-ray image

Radiographic Positioning Guide 1

Os pisiforme

Positioning and centering

Material: 18/24, 5200, (5400), appropriate side marker, lead apron, two wedged positioning aids (15°, 45°), weights.

Bucky: cassette/detector

Exp. EU: 45-55 kV

Exp. CH: 42-46 kV

Speed class: 2000

Format: 18/24

TFD (-FFD, -SID) EU: 105 cm

TFD (-FFD, -SID) CH: 120 cm

Grid: no

Filter: no

Measuring chamber:

Focus: small

Correct X-ray

Patient position: The patient is seated laterally, arm and hand in a straight line. Semi-supinated position of the hand 60° to the film. Some dorsiflexion of the wrist may be used. Support the hand with a positioning aid. Make sure the lead apron covers the legs.

Alternative: Some dorsiflexion of the wrist may be used. Both hands next to each other, scoop position, for a comparative view.

Cervical ray: Perpendicular to the Pisiform and the center of the film.

Comments/Notes: A comparative view of the other side may be indicated, remove jewellery.

Hints: Comparative view: Both arms on the bucky, both hands semi-supinated 60° to the film. Slight dorsiflexion at the wrist: so called "scoop position".

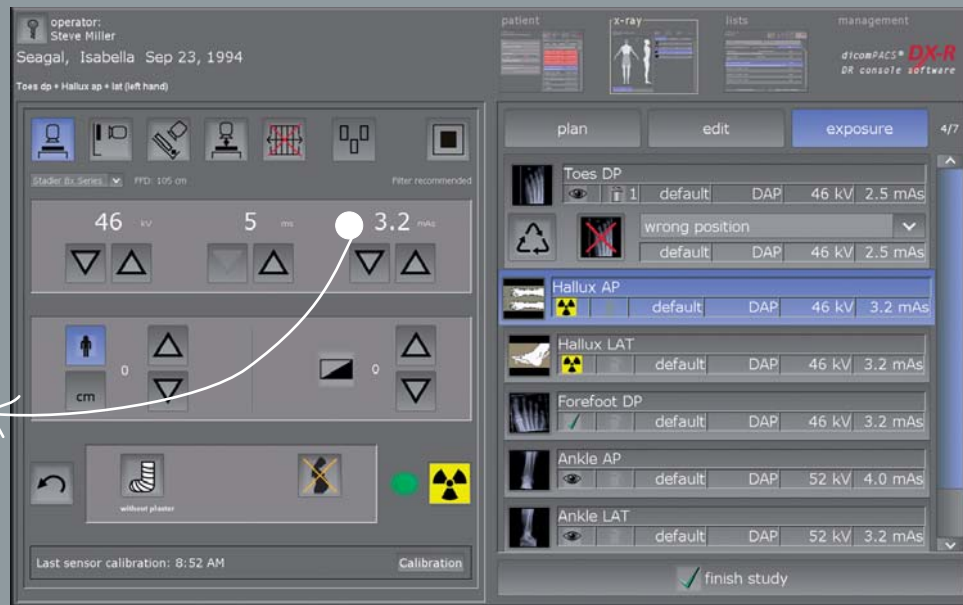
Presentation of helpful hints for the positioning of the patient, central beam, tips and tricks, frequent errors etc.

Preview of the X-ray image and worklist



Preview of the current X-ray image

Generator control



The generator panel displays all values and settings (kVp, mAs, focus etc.) recommended for a specific examination

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
dicomPACS[®] DX-R image processing

Image diagnostic

at the highest stage

- Completely integrated **dicomPACS® Viewer for image diagnosis**, further processing and storage of images in an SQL database incl. image manipulations, export options, layout adjustments, freely configurable user interface and much more
- Stepless **zoom, PAN, magnifyer, ROI, crop, rotate, mirror** etc.
- Insertion of **image annotations**, e.g. free texts, arrows, ellipses etc.
- **Measuring** of distances, angles, areas and density

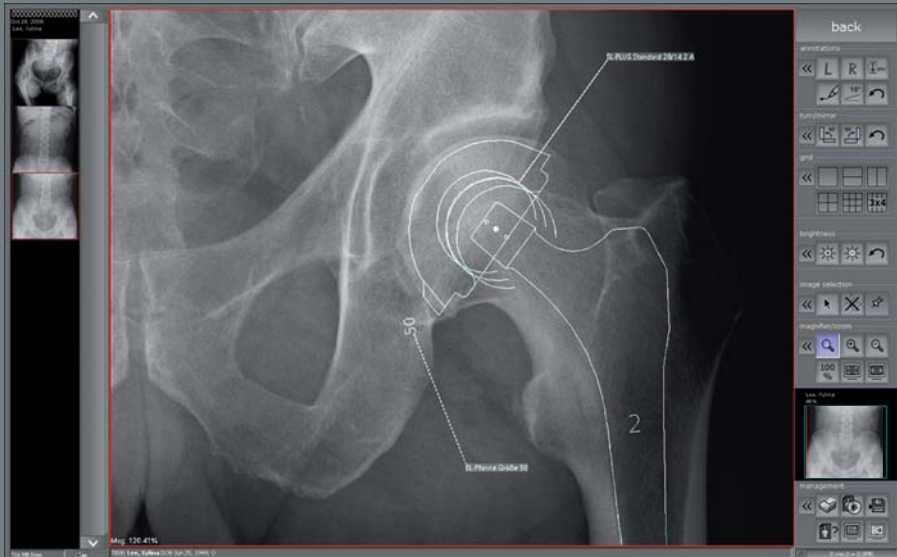


- Adjustment of window/level options and **gamma correction**, sharpening filters, noise suppression
- Many additional functions such as **Chiro Tools**, calculation of **Cobb's angle**, **pelvic obliquity measurements**, **integrated capturing of diagnostic reports** etc.
- Creation of **DICOM patient CDs** with free **WEB viewer**
- **Export of images** to JPEG, TIFF, BMP and DICOM format
- Image transmission via integrated **e-mail function** – no external e-mail program required
- Easily upgradable to the professional, **integrated image management system** (PACS)

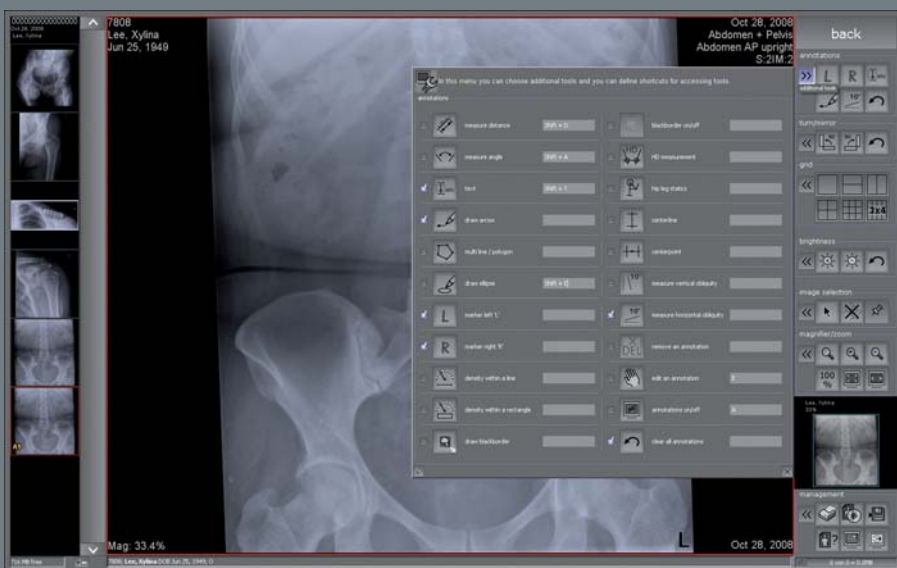
Integrated viewer



Completely integrated **dicomPACS**® viewer for image diagnosis



An integrated prosthesis documentation module provides preoperative planning (optional).



The system enables fast and easy customisation of the operating interface for individual customer preferences.

Useful tools such as the configurable measuring magnifier make diagnosis much easier.



The stitching module merges a number of separate digital X-ray images into a single image.



Comprehensive search tools enable the comparison of X-ray examinations of one or more patients.



Mobile

Web-based viewer **dicomPACS® MobileView** for mobile and stationary devices (optional)

The web-based viewer **dicomPACS® MobileView** counts among the many extension modules of **dicomPACS®** diagnostic software. As a virtually independent browser, it allows the viewing of image material on mobile devices also outside a clinic or a practice. The doctor or the nursing staff can access all image material from the **dicomPACS®** system worldwide via a network connection.

In addition to mere diagnostic evaluation of images, the **dicomPACS® MobileView** viewer allows diagnostic reports to be captured and exported. Documents may be attached and exchanged. All diagnostic reports of a patient are always displayed. Individual diagnostic reports of a patient may be selected for exporting and formatted.

There are many applications. On-call hospital doctors can promptly make a first diagnostic thanks to **dicomPACS® MobileView**. This saves the patient a lot of time and additional visits. But also during a ward round, further treatment can be discussed together with the patient or colleagues directly at the bedside using a mobile device.

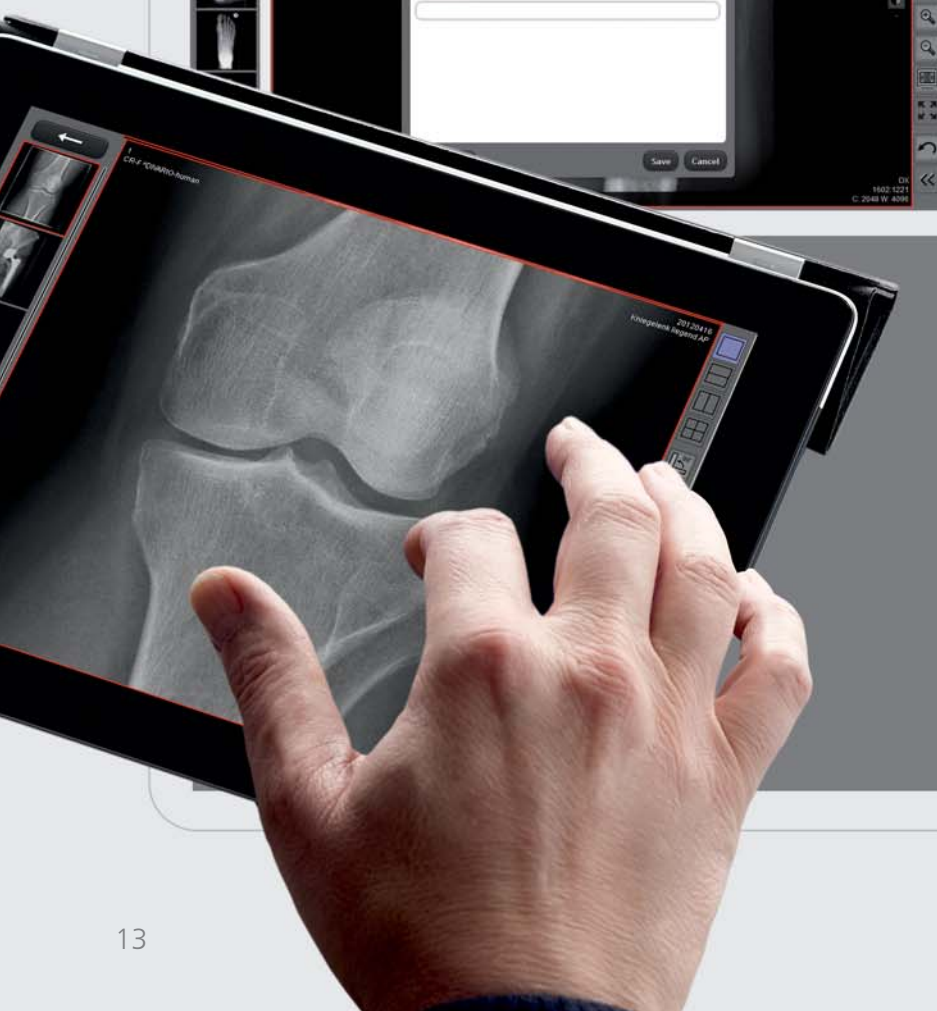
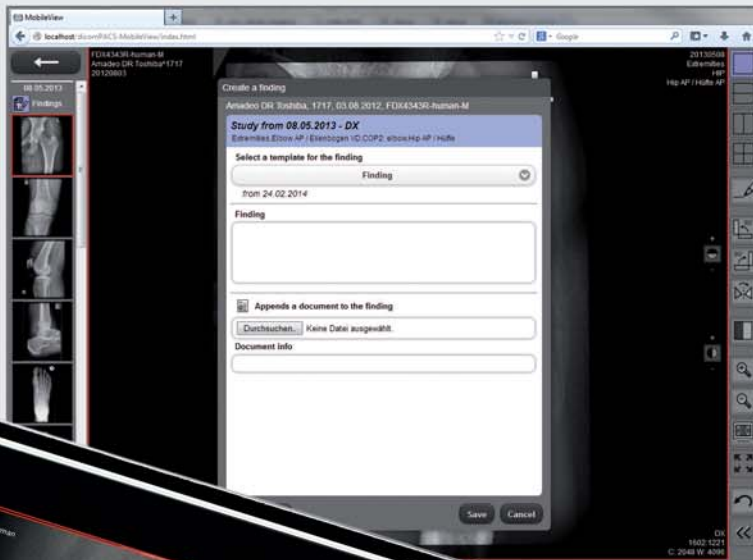
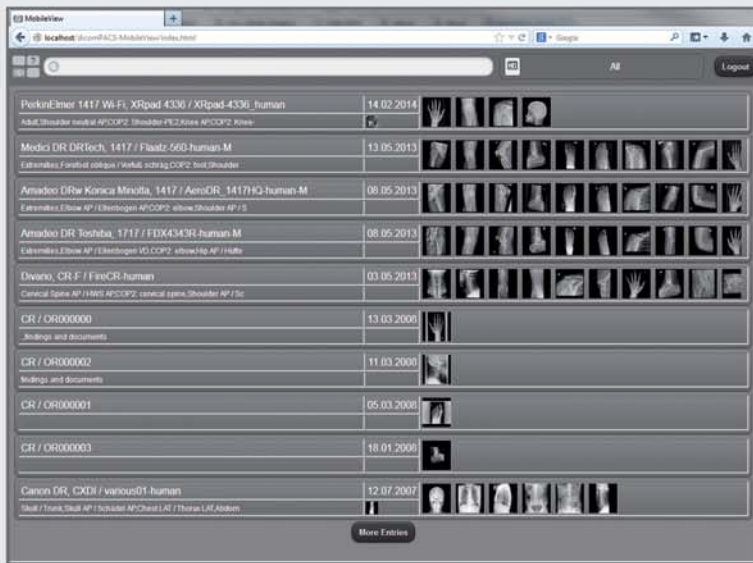
dicomPACS® MobileView can be installed in addition to existing **dicomPACS®** diagnostic modules (diagnostic workstations). It is irrelevant whether the **dicomPACS® MobileView** software is used on a network PC (pure viewing workstation) or/ and on a mobile device.

Worldwide access to all image material is available via a network connection, e.g. VPN access via the internet, of the used mobile device to the central **dicomPACS®** system in the office or clinic.

The main advantages at a glance:

- High flexibility through the use within various internet browsers, including Microsoft Internet Explorer, Mozilla Firefox, Google Chrome, Safari 5, Safari for iPad and Android browser
- Intuitive operation
- Supports the multi-touch operating technology (e.g. zoom in and out with two-fingers)
- Supports full screen mode
- Allows accessing the **dicomPACS® DX-R** or **dicomPACS®** database without any additional modules
- Allows playing series (e.g. ultrasound)
- High loading speed with modern streaming technology





Features of

dicomPACS® MobileView

The web-based viewer offers an important range of functions of a professional PACS viewer:

- Draw annotations
- Measurements
- Registration of diagnostic findings
- Attach documents
- Draw lines and arrows (multi-coloured)
- Compare images in different grids
- Adjust brightness/ contrast
- Flip and rotate images
- Adjust brightness / contrast
- Invert, zoom in / out
- Full screen, fit image
- PAN
- Scroll through image series
- Cine loop for multi frame series and CT/ MRI
- Export images and documents
- Print images and documents

Cloud-based

Cloud-based telecommunication solution and data archiving for images, documents and diagnostic evaluations for stationary and mobile applications

Even for state-of-the-art practices and hospitals, the rapidly rising data flood of digital images, diagnostic reports and other documents is becoming increasingly challenging. Current legislation demands safe and long-term storage of patient data which generally requires investing in expensive hardware infrastructure as well as maintenance and corresponding staff costs.

To this end, we developed the **ORCA** Cloud archiving solution, thus paving the way for cost-effective and safe Cloud-based data archiving in practices and clinics. **ORCA** offers two application options:

- **Archive function:** Safe, long-term archiving of patient data with intelligent usage of internal databases
- **Share function:** Communication platform (exchange of images and diagnostic reports) with colleagues and specialists or as an easy way to forward image data to patients (an alternative to creating patient CDs)

Data is **exclusively** archived on European servers with the relevant safety certificates.

Benefits of Cloud archiving through **ORCA**



Minimal expenditure: **ORCA** does not require investing in expensive infrastructure such as server and data cables.

Scalability: The amount of memory required when using **ORCA** is determined by the demand.

Long-term security: **ORCA** archives data on many individual European servers in professional and air-conditioned data centres. Server technology is continuously updated.

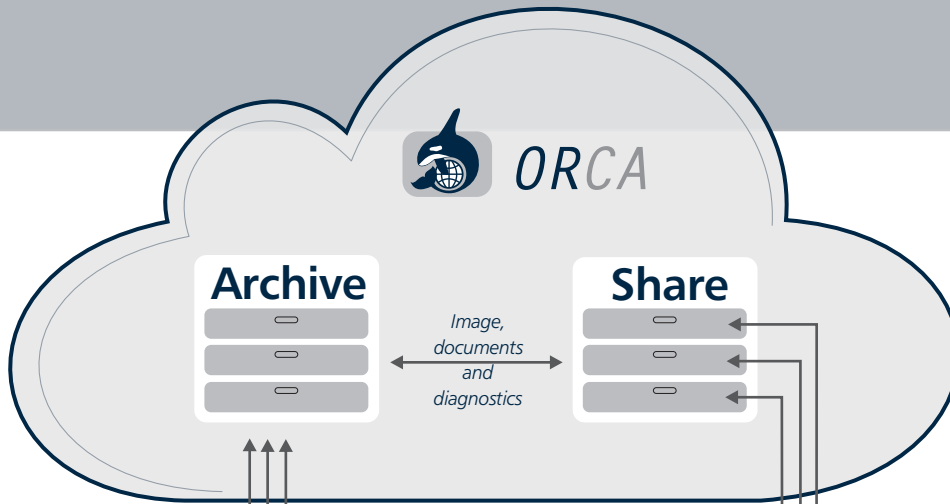
Accessibility: **ORCA** stands out by being highly accessible. Since data is saved with multiple redundancy, **ORCA** guarantees more continuity than a mere server solution.

Environmentally friendly: **ORCA** is sustainable – through the optimised use of resources and their distribution.

Location-independent: **ORCA** guarantees access to archived patient data – worldwide.

Simplicity: **ORCA** allows easy access to data from any computer – from your place of work, from the comfort of your home or from any other computer or tablet PC.

Stress-free: **ORCA** deals with everything – no need to struggle with loose network cables, removed hard drives or software problems.



„Archive“ function

Safe long term archiving of patient data with intelligent use of professional data storage

Big and small hospital, doctor's practice, medical centre and medical facilities on ships, oil platforms etc.

dicomPACS®
image management system



dicomPACS® viewer
Tablet-PC/Laptop

Images,
documents
and
diagnostics



dicomPACS® viewer
home workstation

Password protected
remote access
via mobile or
stationary devices

Communication platform for colleagues and specialists as well as an easy way to forward image data to patients

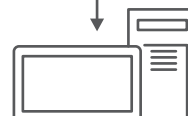
„Share“ function



Colleagues

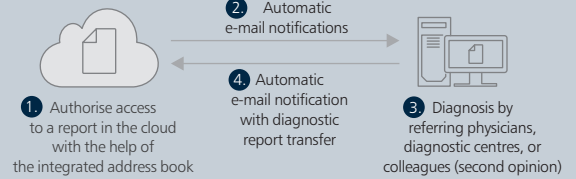


Referring physicians/ patients



Diagnostic centres

Share functionality



Special Chiro Tools

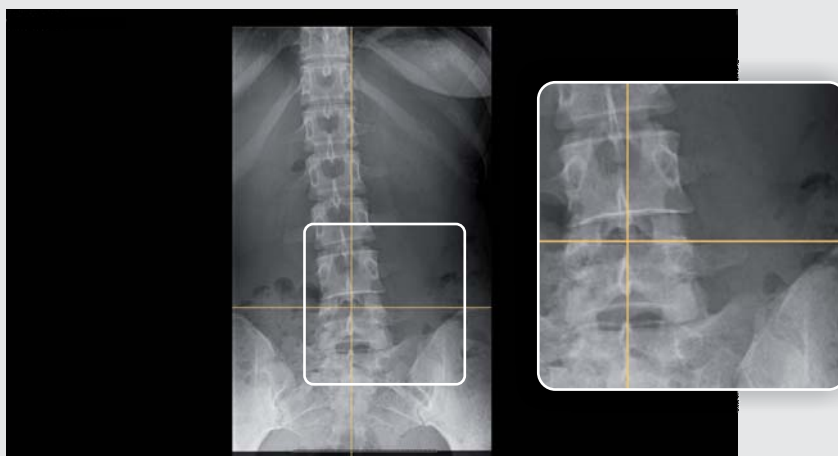
Diagnostic tools for optimal diagnosis

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.

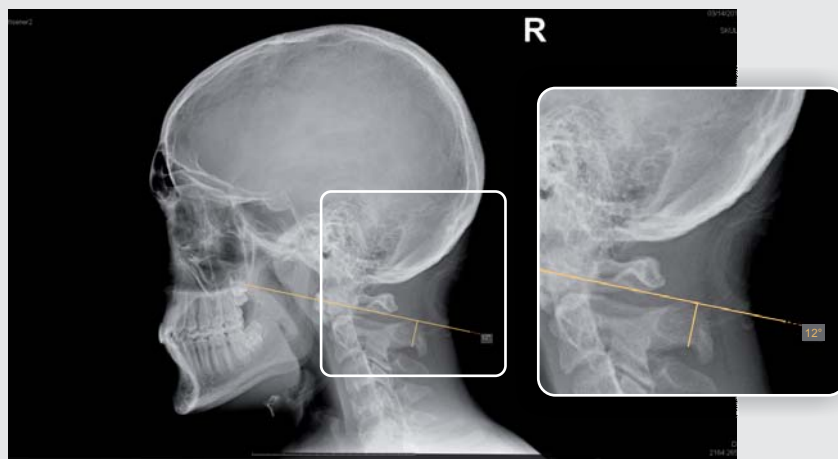
Axis line

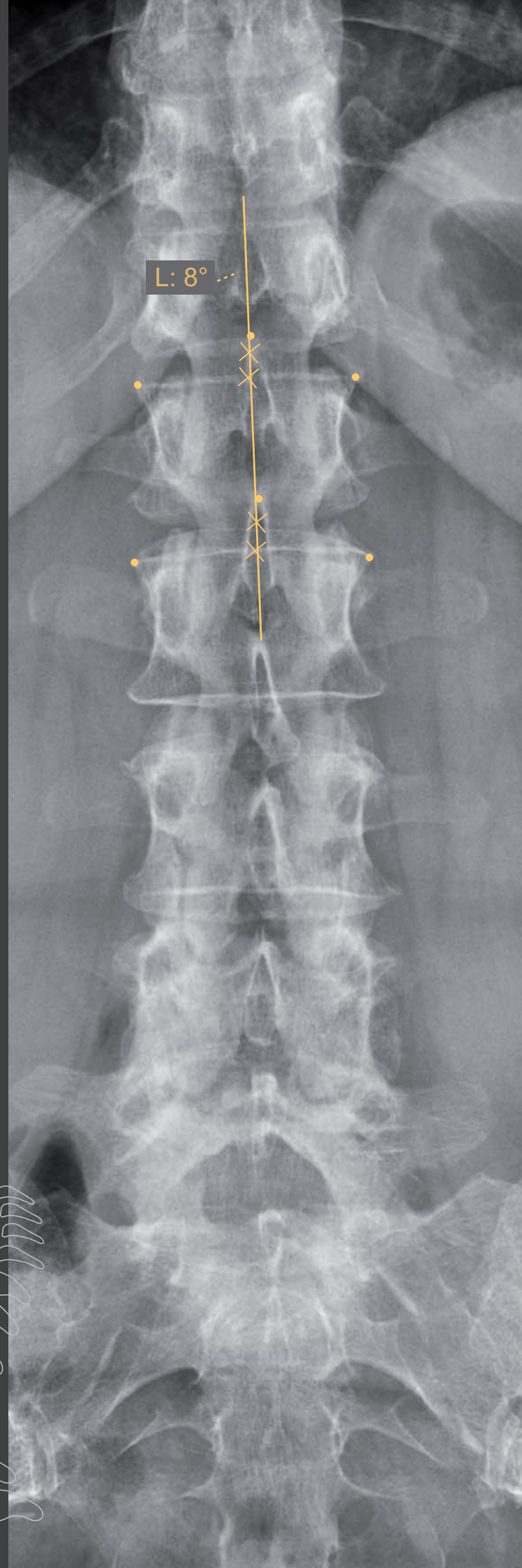
The tool creates a vertical or horizontal axis, depending on the direction, in which the mouse pointer is moved.



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.





Chiro tools

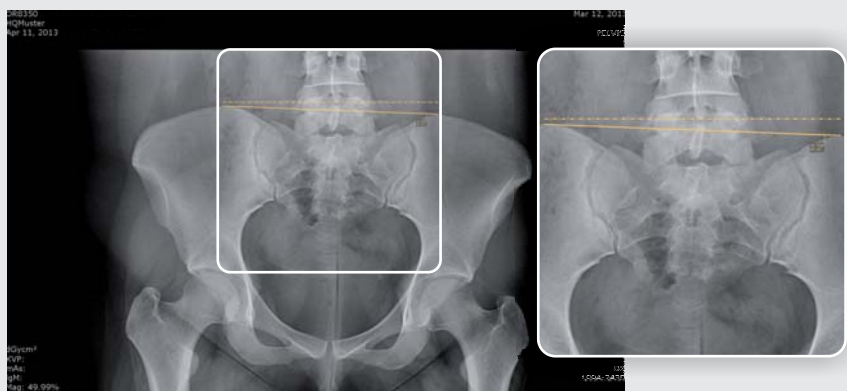
George's line

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).



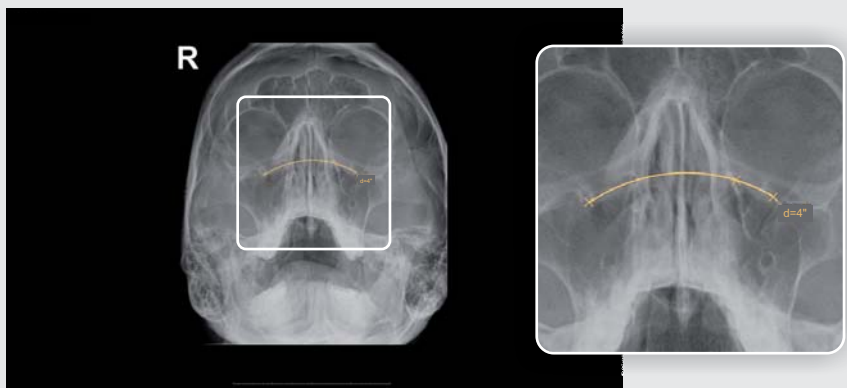
Horizontal or vertical level

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.



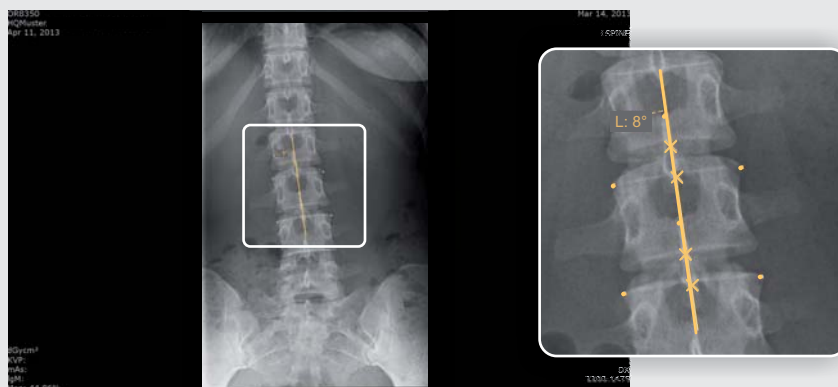
Spinal curve

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.



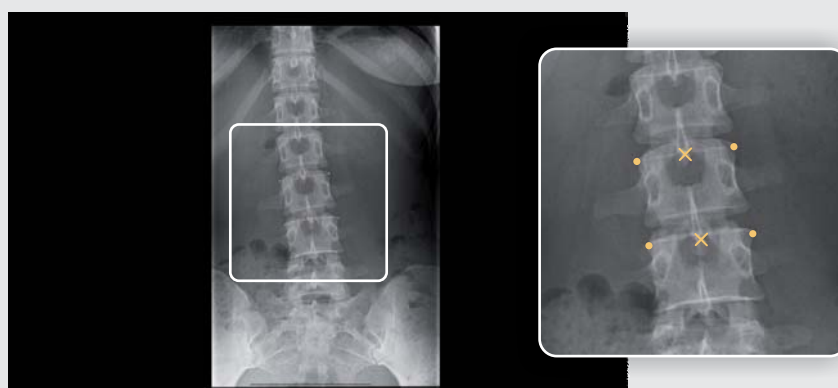
Vertebrae line

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.



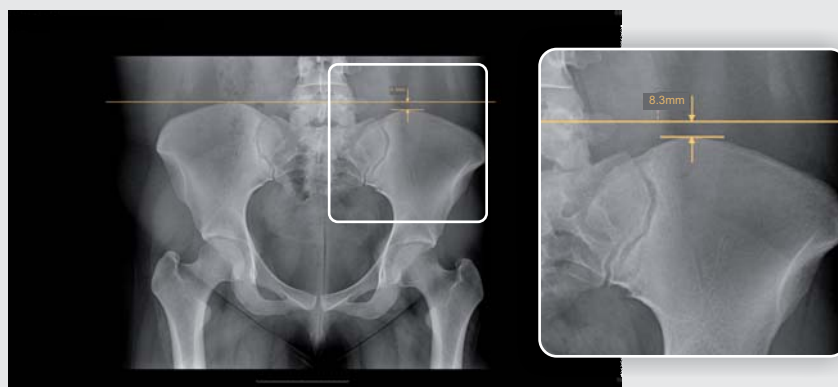
Distance comparison

This tool compares the distances between three set points (between point 1 and 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.



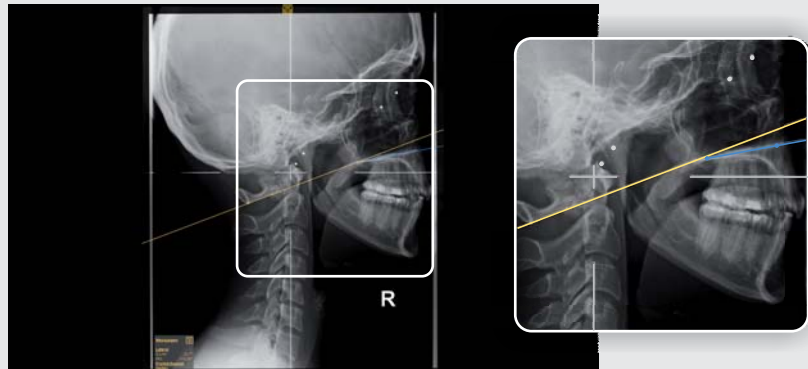
Special Tools

dicomPACS[®] 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.

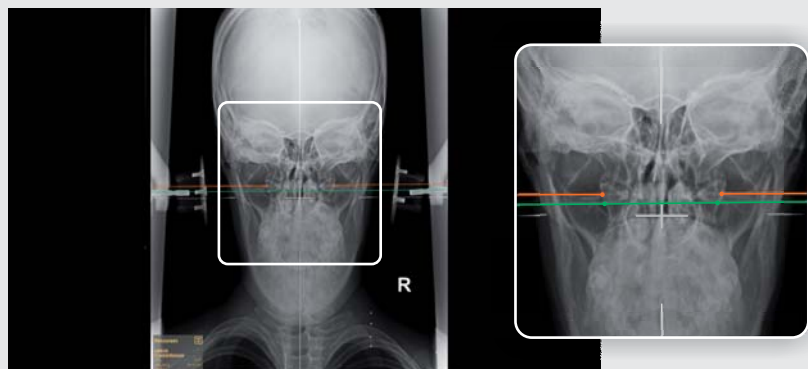
S-Line and Hard Palate Line and Raw Data Box

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.



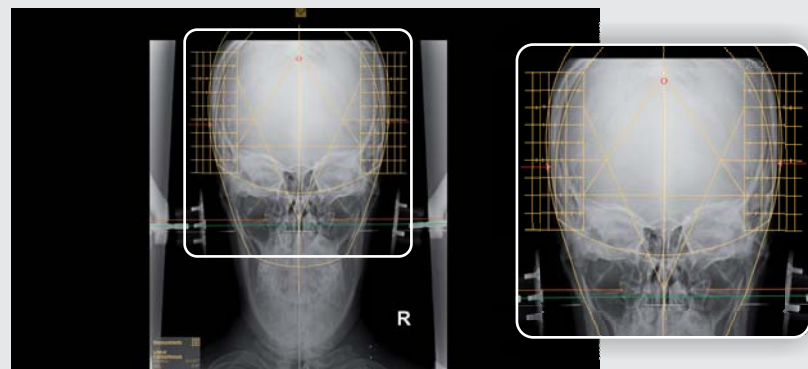
Atlas Plane Line and Atlas Check Line

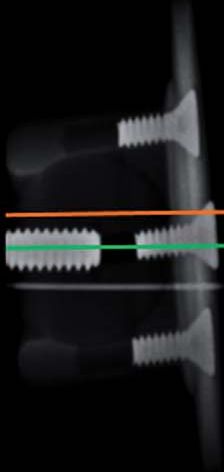
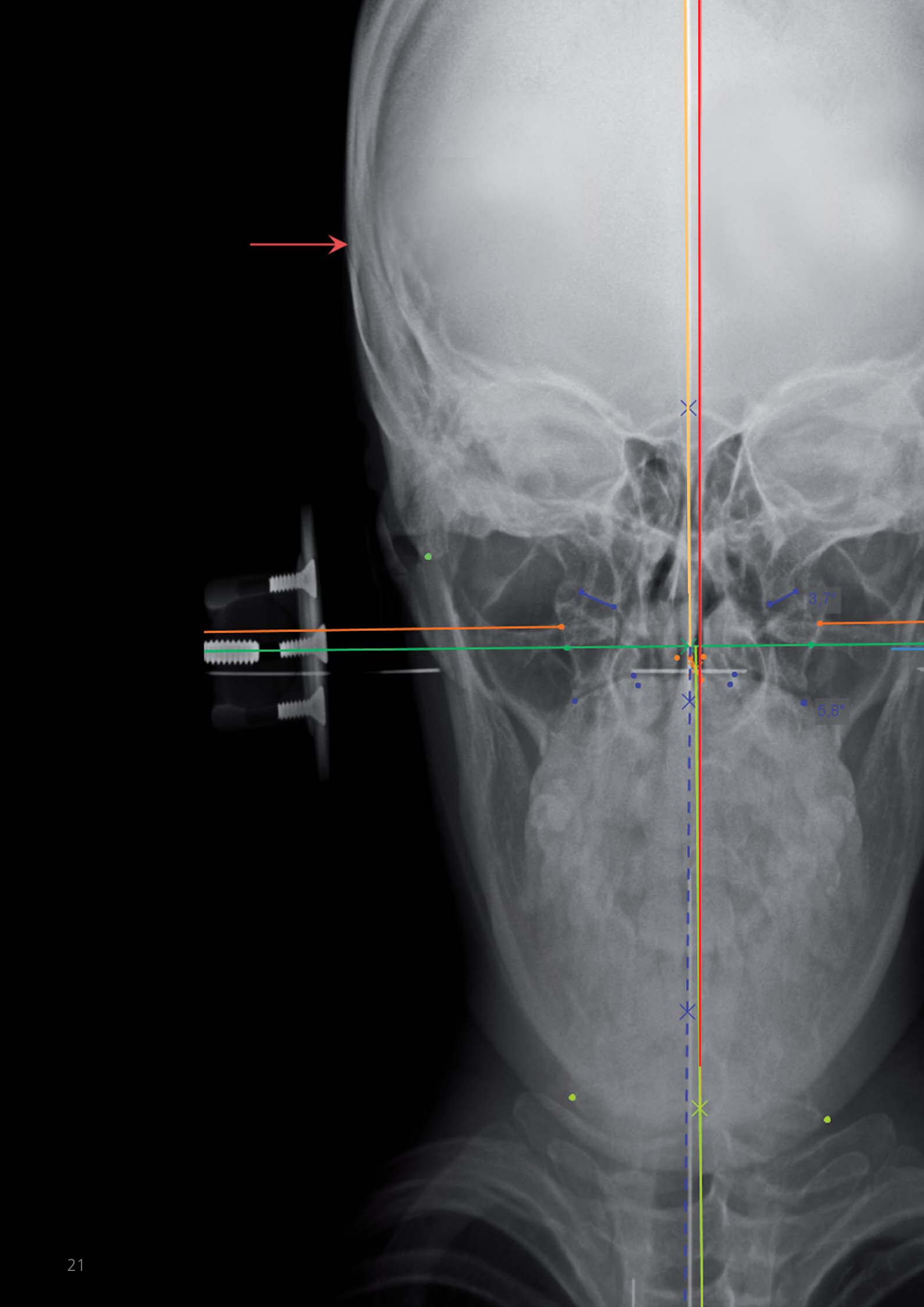
The horizontal angle and the angle between Atlas Plane Line and Atlas Check Line will be shown in the raw data box.



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.



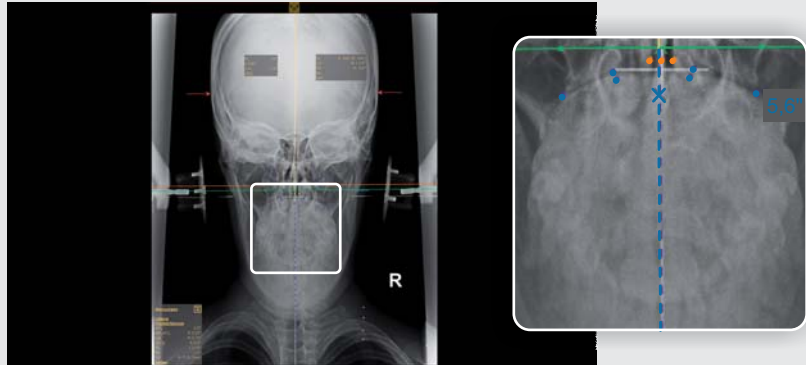


3.7°

5.8°

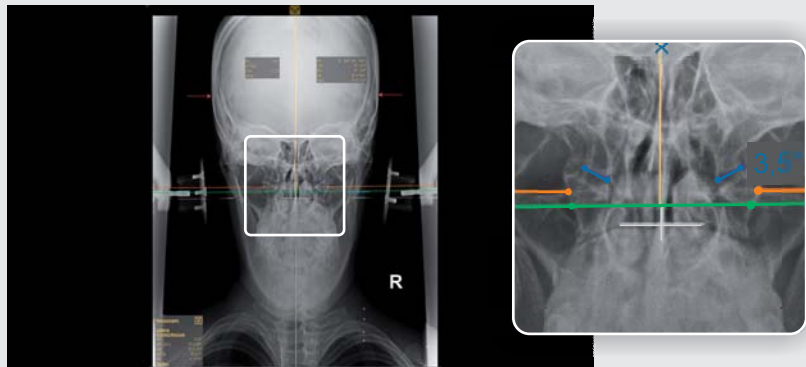
Axial Circle

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.



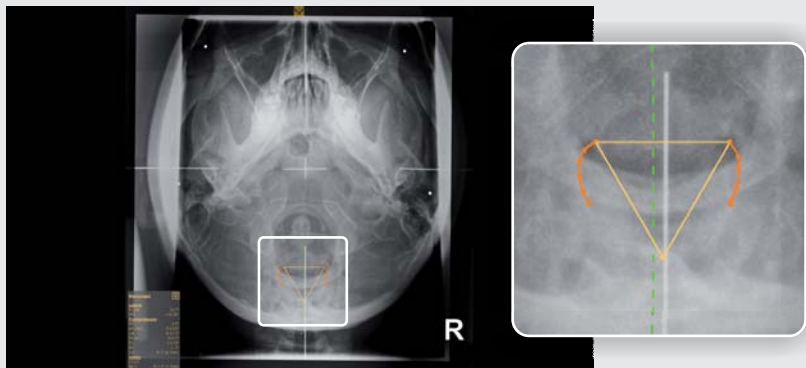
Condylar Circle

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.



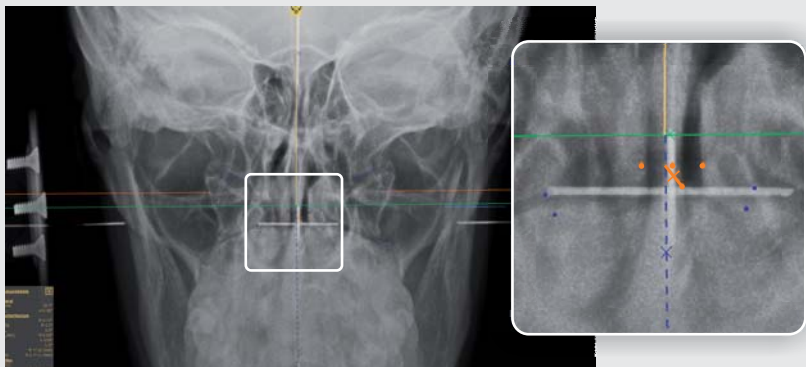
Odontoid Center and Vertex Square

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.



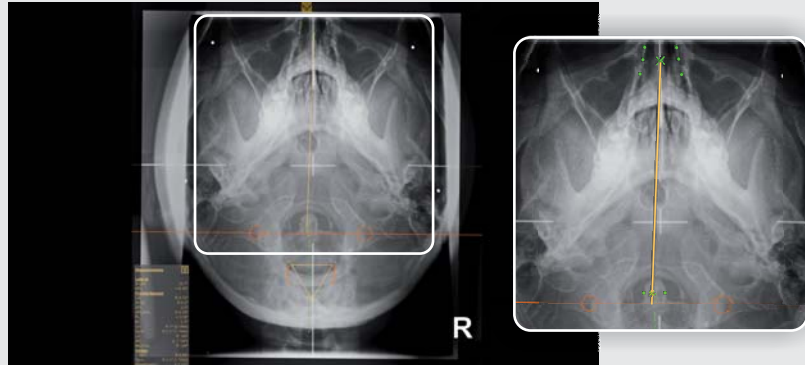
Odontoid, Spinous and Relatoscope

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.



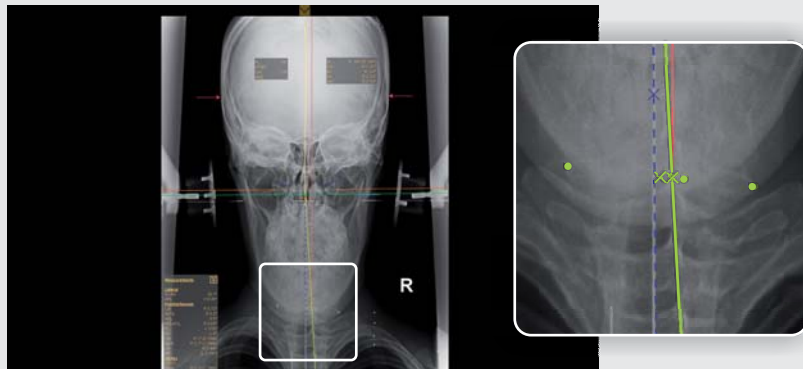
Vertex Skull Line

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 calculated.



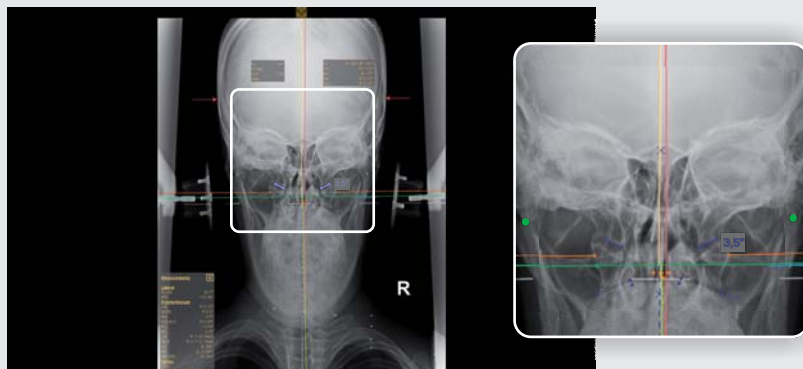
Lower Angle and Angular Rotation

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



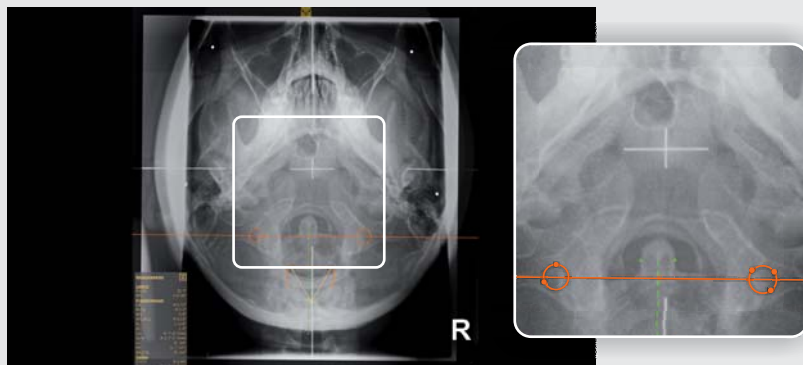
Intermastoid Line

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.



Scope of delivery

The Divario CR-T include the following components as standard:

Components

CR unit for table

Cassette sizes type CC: 35 x 43cm (14" x 17"), 35 x 35cm (14" x 14"),
24 x 30cm (10" x 12"), 18 x 24cm (8" x 10"),
15 x 30cm (6" x 12")

Processing Capacity: Up to 73 IPs/hr. (18 x 24 cm)

Reading Specification: 10 Pixel/mm, 5 Pixel/mm

Dimensions (H x W x D): 560 x 540 x 392mm (22"x 21"x 15")

Weight: 39 kg (861lbs.)

Operating conditions:

- Temperature: 15-30°C
- Humidity: 15 -80%RH (No dew condensation)
- Atmospheric pressure: 750-1060 hPa

Power Supply Conditions: Single phase 50-60Hz AC120-240V ±10% 1.9A (max)

Additional specifications for **Divario CR-Tm** with:
Resolution: 50 µm

In addition to the standard cassettes are available for **Divario CR-Tm** following IP cassettes type CH:
24 x 30 cm (10" x 12")
18 x 24 cm (8" x 10")



Divario CR-T2



Divario CR-Tm

CR cassettes

All common cassette sizes are available:

- included for **Divario CR-T2**: 1 x 35 cm x 43 cm
- included for **Divario CR-Tm**: 1 x 35 cm x 43 cm

Other formats and quantities available optionally



Divario CR-T software package

with **dicomPACS® DX-R**, the professional console software with modern graphic user interface with generator control, integrated X-ray positioning guide and basic software modules:

- **dicomPACS® DX-R** DICOM Send SCU incl. MPPS and Storage Commitment
- **dicomPACS® DX-R** DICOM Worklist SCU + **dicomPACS®** Connect
- **dicomPACS® DX-R** DICOM Patient CD
- **dicomPACS® DX-R** Cognition Optimised Processing



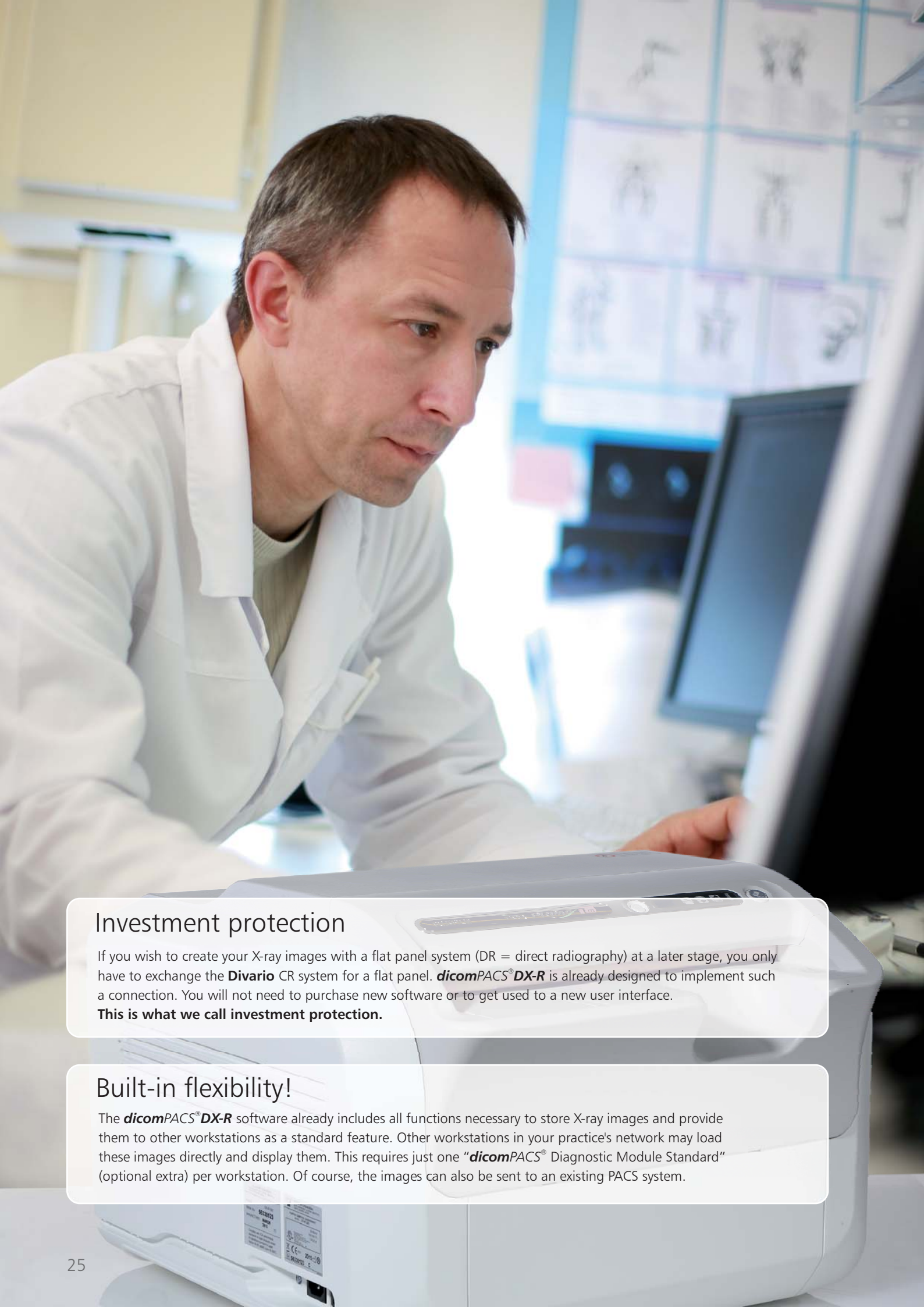
Optional components:

dicomPACS® DX-R controle console

Operating console (two options available), MS Windows 8 Professional, hardware stress test, software pre-installation, system checked and ready to use

- Option 1: Archive and diagnostic station*
- Option 2: Notebook*





Investment protection

If you wish to create your X-ray images with a flat panel system (DR = direct radiography) at a later stage, you only have to exchange the **Divario** CR system for a flat panel. **dicomPACS® DX-R** is already designed to implement such a connection. You will not need to purchase new software or to get used to a new user interface.

This is what we call investment protection.

Built-in flexibility!

The **dicomPACS® DX-R** software already includes all functions necessary to store X-ray images and provide them to other workstations as a standard feature. Other workstations in your practice's network may load these images directly and display them. This requires just one "**dicomPACS®** Diagnostic Module Standard" (optional extra) per workstation. Of course, the images can also be sent to an existing PACS system.

Portfolio

Overview - products of OR Technology



Medici DR Systems

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



Leonardo DR Systems

DR suitcases - compact suitcase solutions for portable X-ray incl. **dicomPACS®DX-R** acquisition software



Amadeo X-ray Systems

Complete digital X-ray systems (incl. stand, bucky, generator, flat panel incl. **dicomPACS®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. **dicomPACS®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



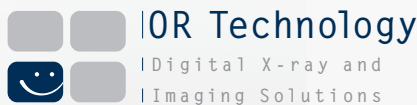
ORCA

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



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