Leonardo DR Systems

The portable **Leonardo DR mini** X-ray suitcase for mobile examinations

Wireless or wired for digital radiography and emergency medicine

Finally X-ray **wireless and battery-powered**

Only approx. **9.5 kg**

Extremely
light & compact
only approx.
9.5 kg

Wireless X-ray imaging with the suitcase system for digital radiography and emergency medicine

Small, light and functional – that's the sleek and well designed **Leonardo DR mini**. This wireless and compact suitcase solution is at 9.5 kg one of the most lightweight X-ray suitcases worldwide. It supports doctors in the field of digital out-patient radiography. The **Leonardo DR mini** suitcase can be used by mobile medical services all over the world, including small medical units on ships, yachts or oil rigs. In cases of emergency, X-ray images can be transmitted rapidly from the medical station to a specialist for an accurate diagnosis when there is no doctor on site. The system can be operated with various X-ray detectors of different sizes.

The sturdy and easily manageable suitcase with its impact and stain resistant synthetic coating is easy to carry with the additional shoulder strap. A built in notebook with a high resolution monitor and our acquisition and diagnostic software guarantees an outstanding image display.

The integrated wireless flat panel detector is light and easy to handle at 1.5 kg. Automatic image alignment in combination with many other features allows for excellent image quality and accurate operation.

The portable Leonardo DR mini X-ray suitcase

Benefits

Digital radiography with **Leonardo DR mini**

Fast radiological examinations irrespective of the location

The **Leonardo DR mini** suitcase is the perfect tool for emergency medicine. The system combines the benefits of a digital high-end X-ray system with the flexibility of a portable device and is designed for use in the confined spaces of a small medical unit as well as outdoors.

Your advantage: Ideally suited for all requirements of emergency medicine

Finally X-ray wireless and battery-powered

DR flat panels of every size are now available in wireless designs. The system allows working continuously for more than 4 hours. The battery can be recharged while driving with the help of the provided charging cable (12/24 V). If you combine them with a battery operated HF X-ray generator, you can take your X-rays completely free of any cables, enjoying full mobility.

Your advantage: No tripping and a lot of room to move even in a stable

Currently the smallest and most lightweight suitcase

The **Leonardo DR mini** system has been meticulously designed to fit into an attractive and small but sturdy suitcase. At currently unsurpassed 9.5 kg, the equipment can be easily carried to the patient by anyone. Only a few simple steps are necessary to set it up for operation.

Your advantage: Easy to transport – fits behind every car seat

The most lightweight flat panel worldwide

Our wireless flat panel weighs an incredible 1.58 kg. Fully automated image re-alignment in the case of a misaligned panel during the shot as well as an automatic warning signal when front and back of the panel are interchanged are just two of the many advantages of this little phenomenon.

A wide range of accessories, e.g. a protection case with or without integrated grid, is available. The fully charged battery lasts for **about 1,000 shots**.

Your advantage: Wireless radiography with the currently most lightweight flat panel featuring exceptionally long battery life

Pixium Portable 2430 EZ

Protection against data loss

Should the wireless connection be not available, our flat panel can save up to 150 images. The images will be automatically sent to the acquisition station once the connection has been reinstated.
Your advantage: No loss of X-ray images if the wireless connection is interrupted

Excellent image quality

Based on its 4 lp/mm resolution, the flat panel offers top of the range image quality.
Your advantage: Amazing images due to cutting edge technology

Easy to use

The professional *dicomPACS®DX-R* acquisition software stands out with an intuitive and contemporary graphic user interface. Examinations are comfortably conducted at the monitor. All necessary settings can be automatically transferred to the generator (optional).
Your advantage: No manual inputting of X-ray settings at the generator

Fast

Shortly after triggering (6 to 8 sec) the X-ray image is available for viewing and diagnosis.
Your advantage: Fast workflow combined with perfect documentation

Well thought through

An integrated X-ray positioning guide provides information on the correct adjustment technique for each examination, including videos, photos, and sample X-ray images as well as many hints and tips.
Your advantage: Correct positioning and adjusting made easy

Constant availability

The integrated diagnostic evaluation software offers worldwide, fast and cost efficient exchange of information (via Cloud and web based viewer solutions), considering and adhering to safety provisions for telemedical solutions - all that is required is internet access.
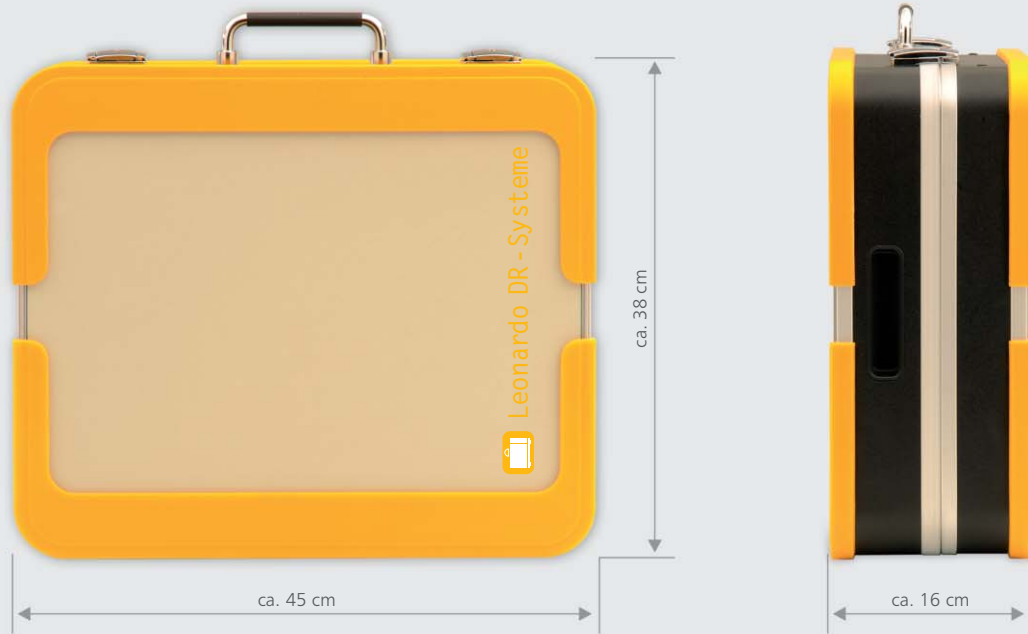Your advantage: The fastest possible diagnosis by a specialist in emergency situations

Line pairs
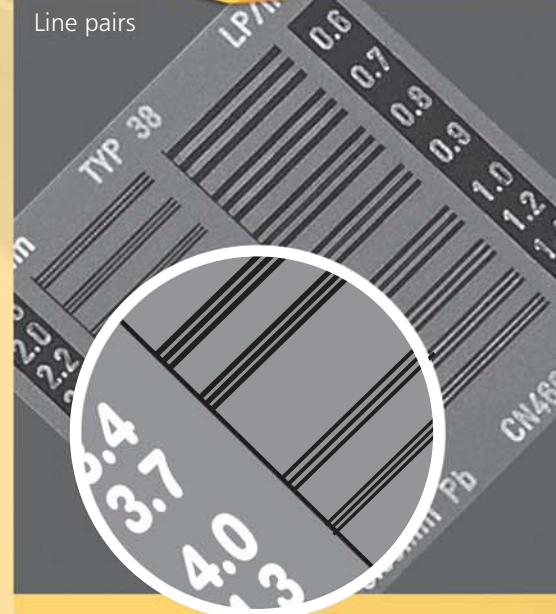
only approx.
9.5 kg

Dimensions of the **Leonardo DR mini**

ca. 38 cm

ca. 45 cm

Leonardo DR -Systeme

ca. 16 cm

The **Leonardo DR mini** suitcase is smaller than a pilot's case

Software

Advantages of the professional *dicomPACS®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

- Integrated **measuring, special image filters and many other tools**
  for measuring and image optimisation

- Allows the user to **subsequently add images** to an examination, even after
  that examination has already been completed

- 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 *dicomPACS®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
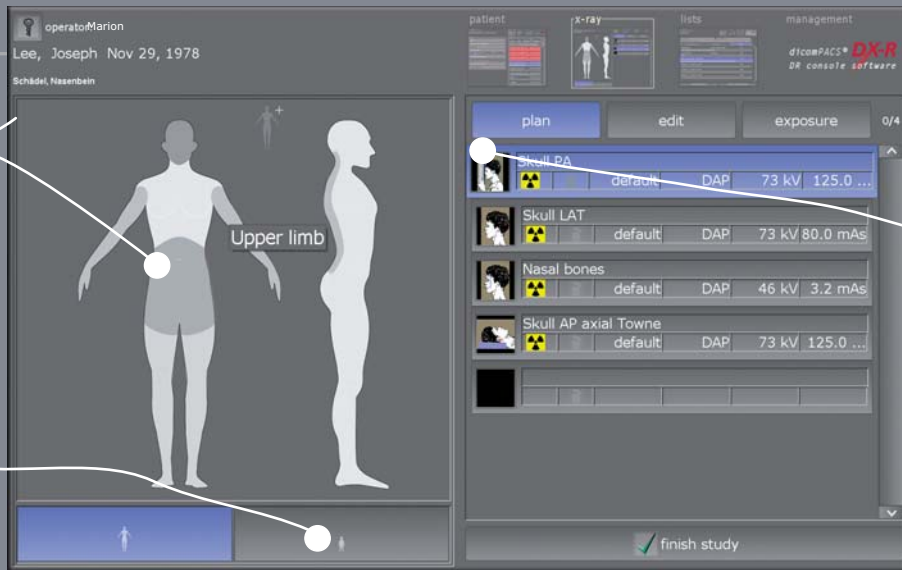   configurable statistical evaluation

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

dicomPACS®**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

dicomPACS®**DX-R** *radiographic positioning guide*

Opens examples of inaccurate X-ray images with comments

Preview of the current X-ray image

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

Software

The browser based viewer solution **dicom**PACS®**MobileView** for mobile terminals (optional)

dicomPACS®**MobileView** is a web-based viewer, that contains all the basic functions for viewing images. The viewing can take place virtually independent from the browser on mobile devices, such as an iPad. **dicom**PACS®**MobileView** offers doctors and nursing staff a previously unknown, mobile freedom in the workplace inside and outside of hospitals or practices, with the radiological image material available at all times.

Fields of application of dicomPACS®**MobileView**

dicomPACS®**MobileView** can be installed in addition to existing **dicom**PACS® diagnostic modules (diagnostic workstations). It is irrelevant whether the **dicom**PACS®**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 **dicom**PACS® system in the office or clinic.

Licensing model

dicomPACS®**MobileView** is used on a concurrent user licensing model. This means that the number of concurrent users is pre-defined.

The main advantages below 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 **dicom**PACS®**DX-R** or **dicom**PACS® database without any additional modules
- Allows playing series (e.g. ultrasound)
- High loading speed with modern streaming technology
- Uses concurrent user licenses
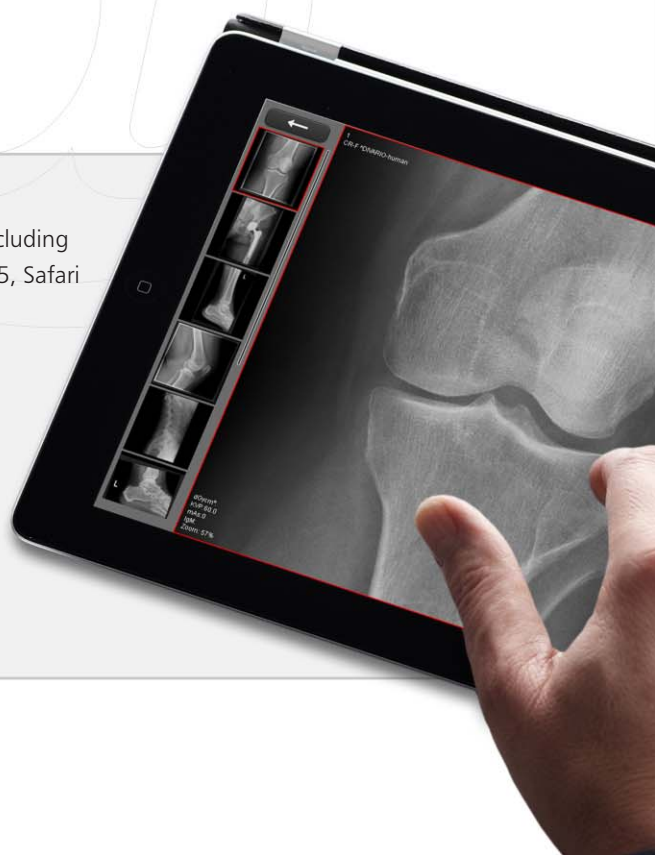
Automatic image processing for optimal quality of X-ray images with *dicomPACS®DX-R* image processing

- 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*

Software

ORCA - the cloud based archive solution for
X-ray images and diagnostic (optional)

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:

→   Safe, long term archiving of patient data with intelligent usage of
      internal databases
→   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.

For emergency situations: Fast radiological diagnosis by a specialist communicating via Cloud, irrespective of the location
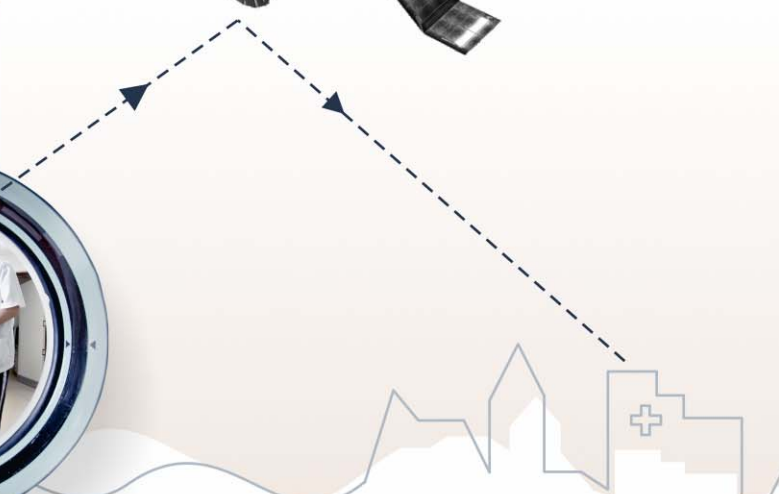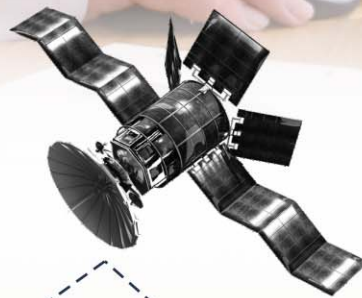
Flexible use

The **Leonardo DR mini** meets all requirements for in patient and out patient use

Various DR detector sizes and versions available:

A number of different wired and wireless DR detectors are available for a variety of requirements and needs. It is advisable to purchase two detectors in case of special medical emergencies for ambulance and rescue services; while one unit remains at the medical station, the other detector can be used for mobile examinations in the field.

Compact design of X-ray detectors for easy transport

Small detectors (24 x 30 cm) can be housed easily and safely in the suitcase. Large detectors (35 x 43 cm) are not integrated in the suitcase but carried in a sturdy separate transport bag, resulting in some substantial benefits:
- Compact design for transport by car
- Lighter suitcase – a significant advantage for transport
- Better weight distribution for carrying

Alternative solutions:

Please note that to carry the big flat panel (35 x 43 cm) in the suitcase, you can turn to other **Leonardo** suitcase systems. The suitcase solution **Leonardo 1417** is easy to transport thanks to its pull-out trolley handle and its integrated wheels.

All necessary pieces of equipment such as the notebook and flat panel as well as cables and hand-switch are placed in a sturdy and compact suitcase.
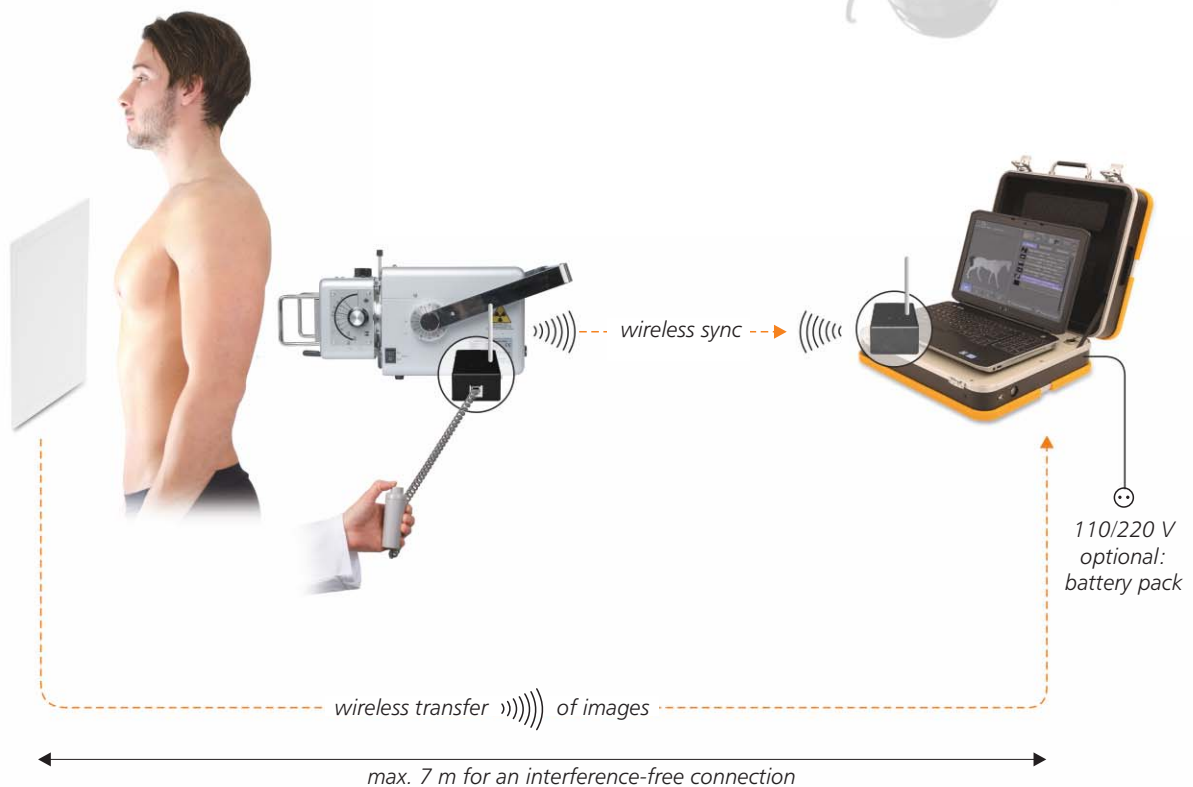
Leonardo 1417

You can now take wireless X-ray images using battery power with the **Leonardo DR mini** system

Tripping over things and restricted room to move when taking X-rays is now a thing of the past. Even on difficult terrain, the **Leonardo DR mini** suitcase is easy to handle and ready for operation without delay.

The X-ray unit and the detector communicate with the acquisition station in the suitcase via wireless connection. Uninterrupted communication is ensured up to a distance of 7 metres between the patient and the X-ray suitcase.

As soon as the shot has been triggered, you can view the X-ray images on the laptop and/or forward them to a specialist (via web viewer or Cloud).

wireless sync

*110/220 V
optional:
battery pack*

wireless transfer))))))) of images

max. 7 m for an interference-free connection

We have meticulously designed the suitcase for you:

The small, light suitcase can be comfortably carried as a shoulder bag.

All components, i.e. the notebook, flat panel incl. protection case etc., are neatly arranged in the case and at hand for immediate use.

The replacement battery ensures that you are not dependent on additional power supply in the field.

The power cable for recharging the battery is housed in a special compartment in the suitcase.

The small suitcase fits behind any car seat, saving space.

Thanks to its handles which are part of the shell, the suitcase can be easily positioned.

The sturdy casing is stain and impact resistant.

The wireless system naturally includes a wireless mouse.

The on switch is countersunk in order to avoid turning off the system accidentally.

The fastener is conceived in such a way that the suitcase can be opened with just one hand.

The transport strap is fast and easy to fasten and to release.

Always ready
Convenient charging while driving (optional)

The system allows working continuously for more than 4 hours. The battery can be recharged while driving with the help of the provided charging cable (12/24 V). Charging time for an empty battery is approx. 4 to 6 hours.

If you combine them with a battery operated HF X-ray generator, you can take your X-rays completely free of any cables, enjoying full mobility.

Functional & light

Accessories for portable X-ray imaging

Portable X-ray detector bracket

In addition to the unbelievably light **Leonardo DR nano** X-ray solution OR Technology has developed a portable and compact detector bracket for room or wardrobe doors, walls etc. Especially suitable for use in old age homes, nursing care wards and in home care, this detector bracket offers enormous benefits. The normal heavy thorax stand is no longer required and will no longer need to be carried to the patient's bed. A room door is sufficient for taking almost any X-ray images of standing or sitting patients – while observing the relevant radiation protection regulations.

Benefits of the portable X-ray detector bracket:

- Height adjustable, suitable for taking almost any X-ray images of standing and sitting patients
- The X-ray detector, placed in its protective cover, can be safely attached to the mounting bracket
- The detector bracket, folded up to save space, fits into the **Leonardo** carry bag (optional)

adjustable for height

Collapsible mobile stand
for portable X-ray units

The collapsible mobile stand can be assembled in less than 10 seconds. It is approved for use in human medicine, it can be swivelled left and right and is height adjustable. The mobile stand is suitable for taking almost any X-ray images of persons in a standing or prone position.

Specifications:

- Swivel arm 750 mm
- Swivel range of the arm 5 degrees to the left, 5 degrees to the right
- Height adjustable up to 1.71 m
- For X-ray units of 5.0 to 15.0 kg
- Dimensions 30 x 35 x 105 cm (folded up)
- Weight approx. 15 kg

Protective housing for the detector
for perfect stress X-rays of patients in a standing position

7

- Protective housing for 14" x 17" detectors
- Maximum surface load of 1,040 kg on the entire imaging area
- Maximum point load of 146 kg per mm

Alternative

Amadeo M-DR: the compact, mobile complete DR solution –
wireless or wired

Do you need a mobile and light complete direct digital X-ray system which combines all the components in one unit?

The **Amadeo M-DR** is a light yet robust portable X-ray system with integrated DR X-ray detector. Owing to its design features, it is ideally suited for use in the most varied conditions. It is also a reliable partner in difficult local conditions, for instance in deserts or confined spaces.

It offers the full range of X-ray diagnostic imaging options for human patients. The entire design follows the principles of mobility and lightweight construction using predominantly aluminium components as well as modern plastics and some stainless steel components for parts under static stress.

All the components required for the X-ray process are combined in one unit and sealed to guarantee safe transport. The 6kW HF generator (monoblock version) ensures unsurpassed performance from 40 to 120 kV. The integrated electronics system box includes a high performance PC, a high resolution 19"HD multi touch monitor and can house different sized detectors.

The **Amadeo M-DR** system is:

- a complete mobile X-ray system utilising wired and wireless DR detectors

- CE certified and approved for any human X-rays

- unrivalled on the global market in terms of efficiency, size, weight and compact design, providing excellent X-ray images under the most varied conditions

- light, mobile and highly versatile (only about 98 kg)

- 98 x 134 cm in size (maximum height setting 165 x 193 cm)

- a highly efficient X-ray system – thus providing the complete range of X-ray diagnostic imaging options for human patients

- very easy to clean since all electronic components are sealed to ensure safe transport

- set up and ready for use in less than two minutes

- achieving top performance in terms of X-ray technology due to its excellent protective lead shield, reducing the controlled area during the X-ray process to as little as 1.5 m

- a reliable partner even under extreme climatic conditions such as high humidity or large temperature fluctuations

**For more details visit
www.or-technology.com**

All
components
are combined
in one unit.

Combination

Leonardo + Amadeo M-AX = portable DR X-ray system
for stationary and out patient use

Are you looking for a portable digital X-ray system that is light and efficient and specially designed for out patient use?

The combination of the **Amadeo M-AX** X-ray system and the **Leonardo** suitcase solution is a perfect symbiosis for mobile X-ray imaging, especially for outdoor use. Due to its very low overall weight and its compact design, the **Amadeo M-AX** is very versatile in its use and easy to transport.

It boasts an optimally calculated weight-size-efficiency ratio. The **Amadeo M-AX** system was developed specifically for doctors and medical services in remote and inaccessible areas, medically oriented aid organisations and ships and oil rigs. Due to its excellent mobility, safe handling can be guaranteed even in confined hospital rooms and lifts. It can also be transported via staircases.

The system is CE certified and approved for any human X-rays.

The **Amadeo M-AX** system can be packed in a special shock proof box and can even be dropped by parachute.

The **Amadeo M-AX** system is:

- a mobile X-ray system used with film/CR cassettes or in combination with DR units

- unrivalled on the global market in terms of efficiency, size, weight and compact design, providing excellent X-ray images under the most varied conditions

- light, mobile and highly versatile (only about 78 kg)

- 98 x 134 cm in size (maximum height setting 165 x 193 cm)

- a highly efficient X-ray system – thus providing the complete range of X-ray diagnostic imaging options for human patients

- very easy to clean since all electronic components are sealed to ensure safe transport

- set up and ready for use in less than two minutes

- achieving top performance in terms of X-ray technology due to its excellent protective lead shield, reducing the controlled area during the X-ray process to as little as 1.5 m

- a reliable partner even under extreme climatic conditions such as high humidity or large temperature fluctuations

Scope of delivery

The standard **Leonardo DR mini** system contains the following components:

Components		Leonardo DRw mini 1210 mobile suitcase system with **wireless** detector	Leonardo DRw mini 1417 mobile suitcase system with **wireless** detector	Leonardo DR mini 1417 mobile suitcase system with wired detector
Compact and light suitcase *Total weight: 9.5 kg (including the complete suitcase, notebook, power supply and electronics) Size: 45 x 38 x 16 cm*		✓	✓	✓
Suitcase transport strap		✓	✓	✓
Notebook *With Intel® processor, 8 GB RAM 39.5 cm (15.5") Full HD display (1920x1080), 500 GB hard drive*	*[for example]*	✓	✓	✓
Flat panel detector 24 x 30 cm (10" x 12") 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*	*[for example]*	✓	—	—
Flat panel detector 35 x 43 cm (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*	*[for example]*	—	✓	—
Flat panel detector CsI 35 x 43 cm (14" x 17")* *Detector with excellent image quality and immediate image availability*	*[for example]*	—	—	✓
Leonardo DR mini software package *with **dicomPACS®DX-R**, professional console software with modern graphical user interface including basic software package and integrated radiographic positioning guide for each examination, inclusive:* • **dicomPACS®DX-R** DICOM Send SCU • **dicomPACS®DX-R** DICOM Patient CD • **dicomPACS®DX-R** Cognition Optimised Processing		✓	✓	✓

*Various types of flat panel on request

Optional components to upgrade the Leonardo DR mini system

Components	DRw mini 1210	DRw mini 1417	DR mini 1417
Battery operation	●	●	●
Wireless synchronisation with any X-ray generatorMobile X-ray system	●	●	●
Portable X-ray detector bracket • *Height adjustable, suitable for taking almost any X-ray images of standing and sitting patients*	●	●	●
Amadeo M-AX • *Dimensions: 98 x 134 cm; maximum height setting: 165 x 193 cm;* • *Weight: approx. 78 kg, light construction, very stable and sturdy* • *Specially developed for doctors and medical services operating in the field*	●	●	●

Protection Case
 • *Available in various sizes*
   - for detectors 35 x 43 cm (14" x 17")
   - for detectors 24 x 30 cm (10" x 12")
 • *Including or excluding grid*
	●	●	●

Transport bag for 35 x 43 cm flat panel *Size: 55.5 x 49 x 6 cm*	—	●	●
Portable high-frequency X-ray generator PORTA100 HF • *30 mA / 40-66 kV / 20 mA / 68-100 kV* • *Compact and light (approx. 16.0 x 16.1 x 30.0 cm)* • *Weight: 9.2 kg*	●	●	●
Portable high frequency X-ray generator PORTA120 HF • *40-120 kV/ 0.3-100 mAs* • *Compact and light (approx. 16.0 x 20.3 cm x 35.0 cm)* • *Weight: approx. 13 kg*	●	●	●
High frequency X-ray unit TR 90/20 Battery • *Battery operated HF X-ray unit with pulse frequency modulation* • *40 - 90 kV* • *Dimensions: approx. 26.5 cm x 22.0 cm x 18.0 cm* • *Weight: 6.8 kg*	●	●	●
High frequency X-ray unit ATX QUANTpower 200/ 400 • *Monoblock units with fully automatic adaptation to different voltage networks* • *Effective output of 6 kW at 100 kV (QUANTpower 400 up to 120 kV)* • *Dimensions: approx. 37.0 cm x 24.5 x 2.15 cm, weight: 11.5 kg*	●	●	●
High frequency X-ray unit SIUI SR-8100 Battery • *Battery operated HF X-ray unit with 2 kW; 40 - 100 kV* • *Dimensions: 52.2 cm x 22.7 cm x 21.7 cm* • *Overall weight: approx. 15 kg*	●	●	●
Mobile X-ray tables and stands *Large selection of X-ray stands and new generation portable systems to make your work easier and more comfortable. Please ask us!*	●	●	●

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 mobile and 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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OR Technology
Digital X-ray and
Imaging Solutions

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