

AeroDR Family



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KONICA MINOLTA

WIRELESS DIGITAL RADIOGRAPHY SYSTEM

AeroDR Family



Giving Shape to Ideas

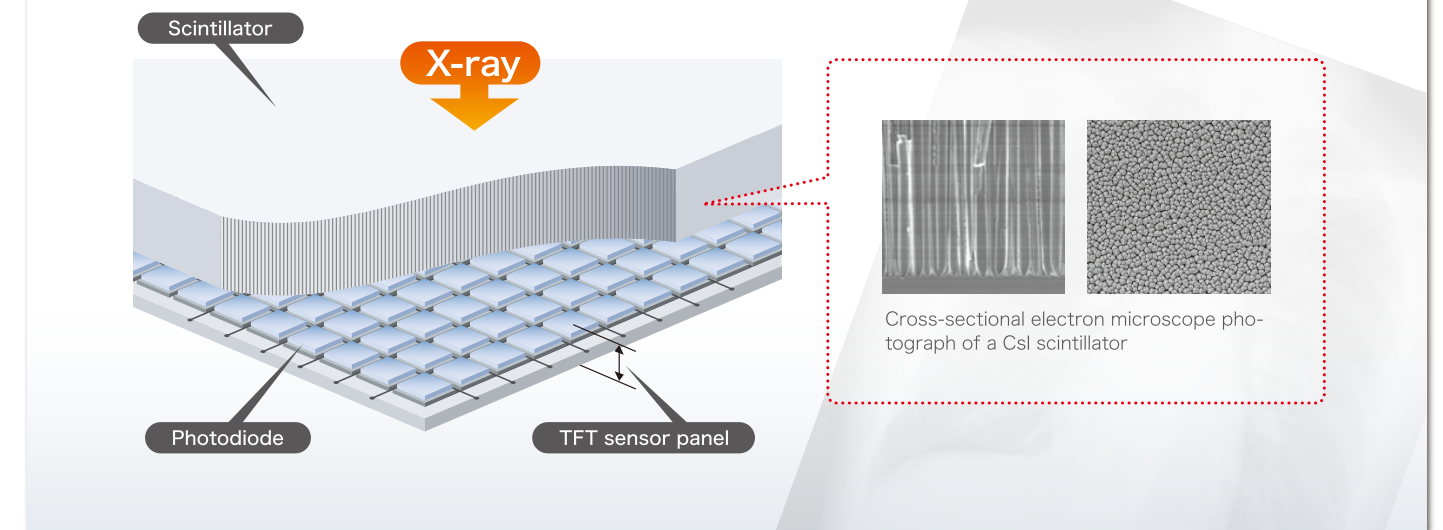


High Image Quality

Scintillator technology

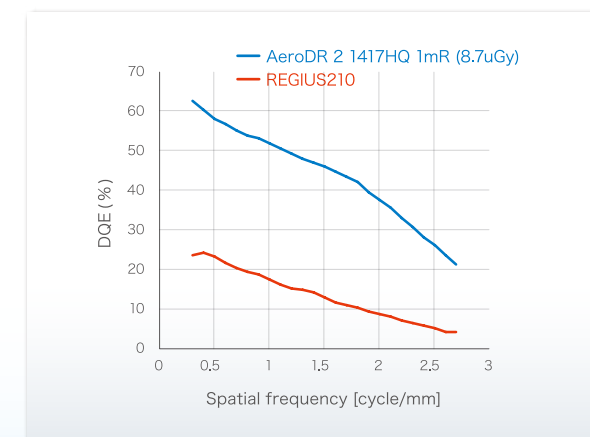
AeroDR offers a "needle crystal" CsI scintillator developed and manufactured by KonicaMinolta. The "needle crystal" CsI scintillator is a proprietary method to apply CsI developed through research and manufacturing experience to deliver high DQE^{*1}.

- Schematic diagram of scintillator and TFT-panel.



High image quality at low x-ray dose compared to CR

The optimal combination of the AeroDR detector using a KonicaMinolta CsI scintillator combined with the newly developed low noise readout ICs deliver high DQE^{*1}.



^{*1} Detective Quantum Efficiency

AeroDR SYSTEM series

Best AeroDR models are selectable to improve current workflow.

Performance model

AeroDR 1417HQ

- Light weight at 2.9kg (6.4lb)
- 211 images / 5.8 hours*2
- Available for AeroSync

Value model

AeroDR 1417S

- Light weight at 2.8kg (6.2lb)
- 211 images / 5.8 hours*2

Performance model

AeroDR 1717HQ

- Light weight at 3.6kg (7.9lb)
- 189 images / 5.2 hours*2
- Available for AeroSync



Performance model

AeroDR 1012HQ

- Super light weight at 1.7kg (3.8lb)
- High image quality at lower X-ray dose compared to CR.
- 146 images / 4.0 hours*2
- Available for AeroSync



Available in 3 versatile sizes.

1012HQ is last piece to complete AeroDR full size line up.

Recommended exposure scenes are X-rays in the field of orthopedics such as extremities, skyline and neonatal in NICU.

Durable monocoque structured cassette

■ Use of CFRP (carbon fiber reinforced plastic)

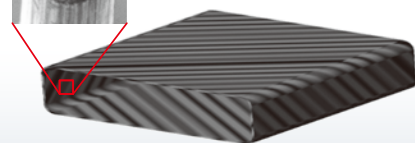
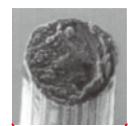
The CFRP is a light and strong composite material hardened with weaved plastic resin.

■ What is monocoque?

A monocoque structure refers to a method of construction used to support structural loads by use of an object exterior.

- Monocoque case made out of carbon fiber

Carbon fiber

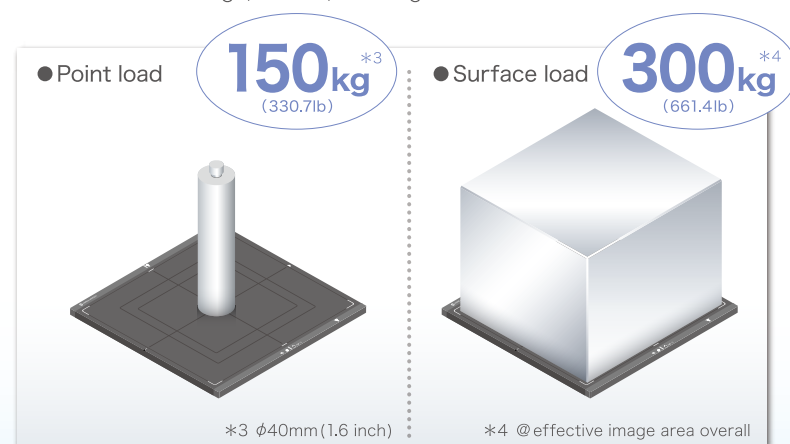


Durability against loading

We consider a variety of operation scenes of DR panels.

■ 1-point load test : Cleared endurance test at 150kg (330.7lb) ϕ 40mm (1.6 inch).

■ Surface load (uniform load) : Cleared endurance test on the entire surface of the 300kg (661.4lb) on image field.



※ Deadweight, even when loaded on the AeroDR Detector, has no effect on images and the AeroDR Detector. The measurement method is based on KM standards.



*2 Under conditions where the AeroDR system is connected to an X-ray system and the interval between studies is five minutes and three images are captured in each study, assuming 20 seconds for each exposure to position the patient.

AeroDR SYSTEM 2 series

KonicaMinolta has reviewed the current AeroDR product features and developed new models.

PREMIUM model

AeroDR 2 1417HQ

- Top model of AeroDR series.
- Super light weight at 2.6kg (5.7lb)
- Rapid cycle time of 6 sec. in wireless operation
- Long operating time of 300 images/8.2hours*2
- AeroSync is available

Value model

AeroDR 2 1417S

- New value model with added values.
- Super light weight at 2.5kg (5.5lb)
- High Robustness same as AeroDR 2 1417HQ PREMIUM
- Rapid cycle time of 6 sec. in wireless operation
- AeroSync is available



Lightest level detector in the world *5

AeroDR 2 1417S is the lightest level 14x17 inch size wireless cassette-type DR in the world. KonicaMinolta developed the ideal combination of components, grip materials and cover design to deliver a durable panel that weighs only 2.5kg (5.5lb). AeroDR 2 1417HQ and 1417S are ideal wireless cassette-type detectors that are easy for you to carry and for patients to hold.

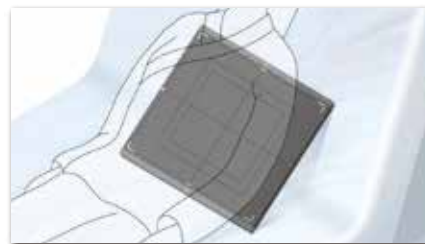
*5 Among wireless cassette-type DRs as of 1st July, 2015



Water resistance IPX6 *6

Cassette-type DRs may be exposed to body fluids, disinfectants and other liquids accidentally. KonicaMinolta considered that such accidents happen and achieved the water resistance grade IPX6. The structure of the AeroDR 2 1417 series does not allow liquids to penetrate or damage the main components.

*6 The product may fail to maintain its waterproof performance (equivalent to IPX6) if it has been dropped. The waterproof performance of this product does not guarantee that product damage or failure will not occur.



Load and bend resistance

KonicaMinolta developed the AeroDR 2 1417 series with actual user operation scenarios in mind. The AeroDR 2 1417 series provides the robustness of the current AeroDR series; as well, it has been cleared for the loading test assuming bedside exposure or exposure to the patient on a stretcher. The AeroDR 2 1417 series achieved twice the robustness of the current AeroDR series and has especially enhanced durability against bending.



< Main features >

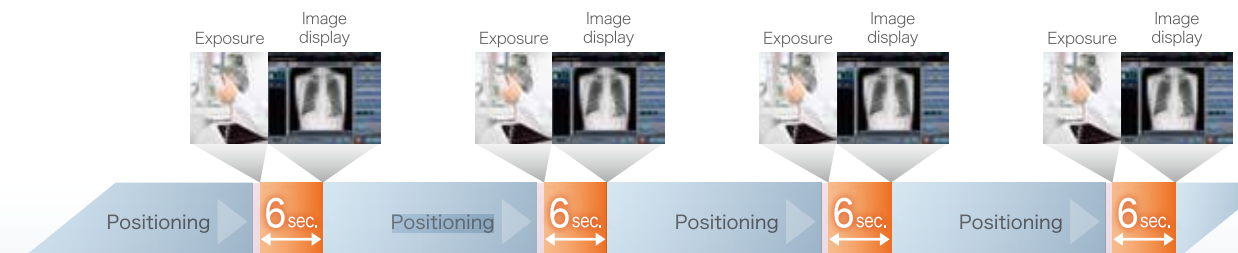
- ▶ **Super light weight provides easy handling**
- ▶ **Highest robustness provides digitalization in various departments in a HP**
- ▶ **Speedy cycle time improves productivity of X-ray exams**



Rapid cycle time

The AeroDR 2 1417 series introduces rapid cycle time, reducing the time needed for image processing to six seconds to improve comfort while increasing productivity.

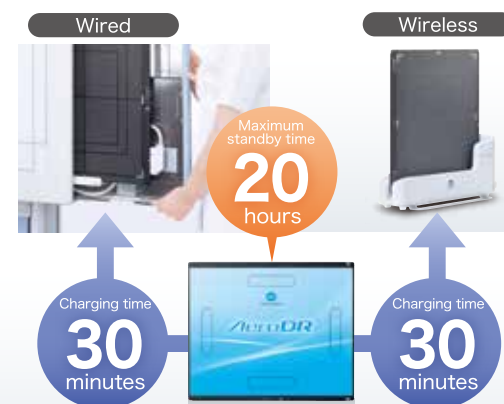
● Rapid cycle time (Console: CS-7)



※When the communication is wired, cycle time is 4 seconds

High-performance power cell

● AeroDR 2 1417HQ (PREMIUM)



● AeroDR 2 1417S



■ Safety

As lithium ion capacitor does not easily generate heat, it is safe to take exams while the panel is faced to a patient body.

■ Long battery life

Expected battery life is the same as that of the AeroDR main body. It is unnecessary to replace the battery pack while operating.

■ Long lasting to avoid stopping operation

8.2 hours and 300 images (AeroDR 2 1417HQ) / 4.1 hours and 150 images (AeroDR 2 1417S)

■ Fast battery charge to complete in a short time

From 0% to 100% within 30 minutes (AeroDR 2 1417HQ) / From 0% to 100% within 13 minutes (AeroDR 2 1417S)

*2 Under conditions where the AeroDR system is connected to an X-ray system and the interval between studies is five minutes and three images are captured in each study, assuming 20 seconds for each exposure to position the patient.

CS-7

Its sophisticated functions will enrich your daily workflow of examination.

Integrated control station CS-7

CS-7 can control AeroDR detectors and connect to CR readers.*7



*7 Please contact your KonicaMinolta sales representative regarding which devices can connect to CS-7.

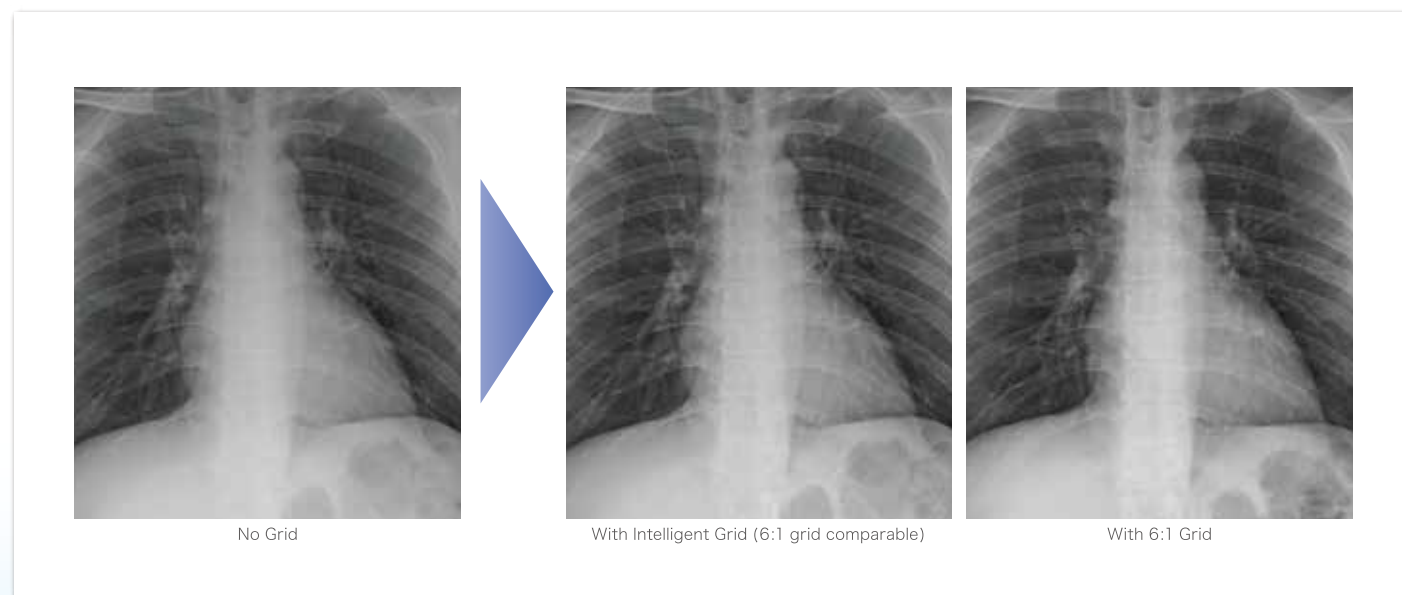
Tube and gauze image enhancement

CS-7 can highlight tube and gauze images that are difficult to be detected with normal images. ※ Optional license is necessary to use this function



Intelligent Grid*8

This is image processing to improve contrast which is affected by scattered radiation without a grid. This function provides easy workflow, and the operator need not carry a grid to perform an exam. Three types of parameters are available from comparable grid ratios; 3:1/6:1/8:1. ※ Optional license is necessary to use this function



*8 The image quality processed by 'Intelligent Grid' is not ensured to be same as the image quality obtained by using a grid.

ImagePilot

ImagePilot provides you with simple workflow by Integral-processing. And by using its image archiving and viewing functions you can also use it as a small PACS.



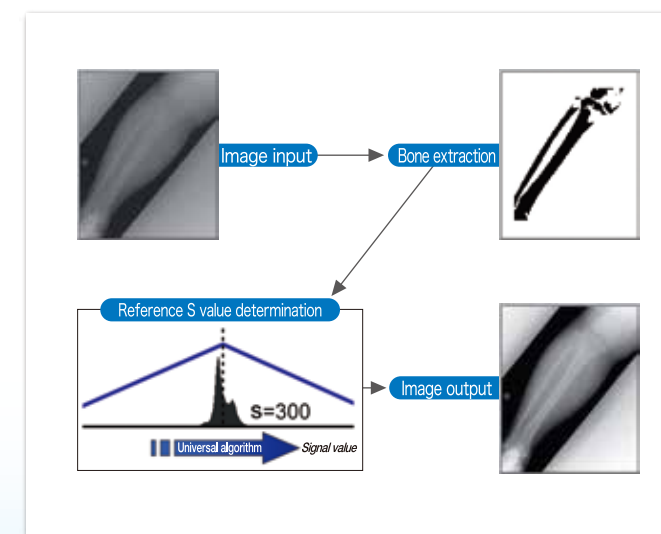
ImagePilot mobile client solution

By carrying the tablet, you can check the image in the examination room or ward. Descriptions of treated patients using the reference image or conferences between doctors can be easily conducted, improving service quality.



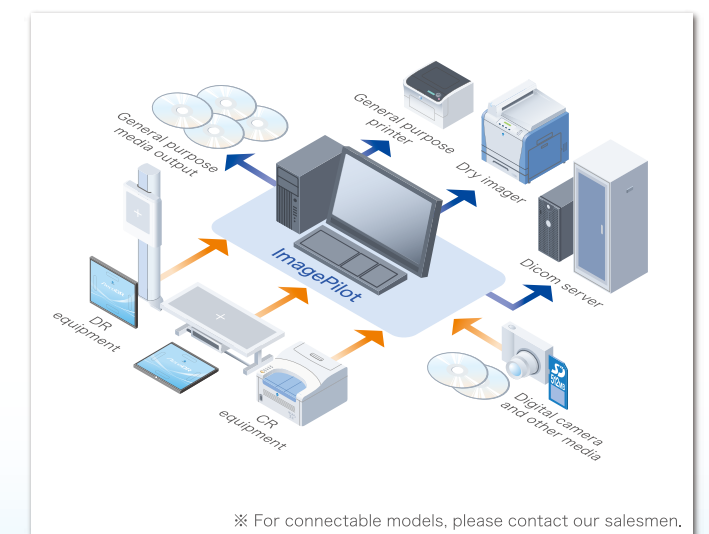
Revolutionary CR with Integral-processing

Integral Processing was created through the abundant CR installation experience of KonicaMinolta. It is a robust algorithm and offers a optimum diagnostic images. This patented technique eliminates the need for the user to define and select specialized parameters for each body part and orientation.



Flexible configuration means improved productivity and convenience

Capture images from additional modalities or import images from other sources. From the viewing screen, images can be printed, exported to a remote host, or written to removable media (CD / DVD etc.).



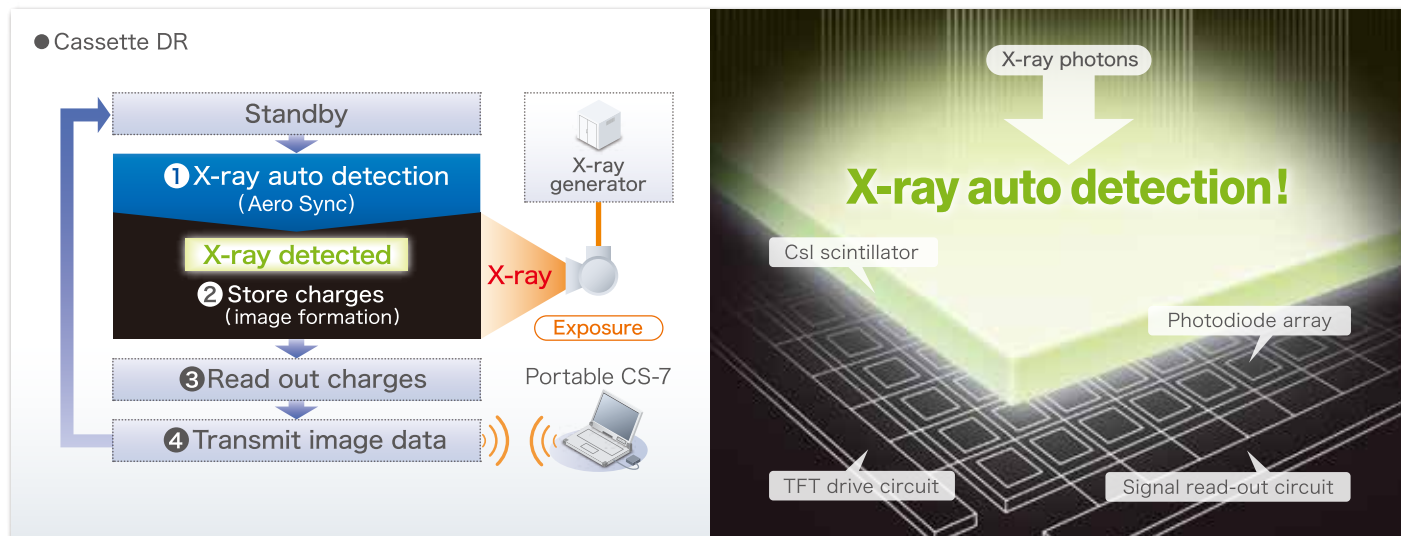
※ For connectable models, please contact our salesmen.

Flexible Workflow

KonicaMinolta can propose convenient, rapid workflow with a reasonable number of panels.

X-ray auto detection mode "AeroSync"

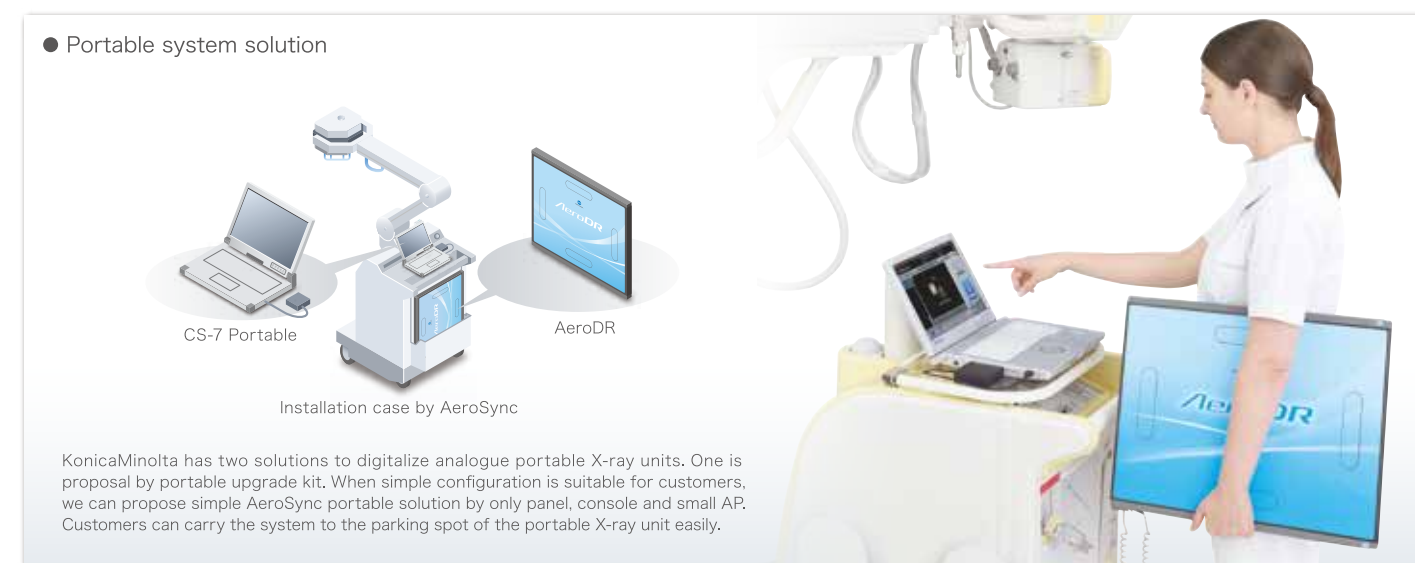
AeroSync®, a new X-ray exposure synchronization technology, requires no cable connections to the x-ray generator. Image capture automatically begins when the AeroDR senses the X-ray exposure. Existing CR or analogue systems can be converted to DR systems by AeroSync easily without connecting to an X-ray system.



New roaming function



- The AeroDR SYSTEM 2 series panel can be carried to any other CS-7 console without concerns over network conditions.
- Necessary panels can be used where needed.



*9 Portable X-ray units need to be arranged separately.

Specifications

AeroDR Detector (AeroDR SYSTEM)

Model name	AeroDR P-11(AeroDR 1417HQ) / AeroDR P-12 (AeroDR 1417S) / AeroDR P-21(AeroDR 1717HQ) AeroDR P-31(AeroDR 1012HQ)		
Detection method	Indirect conversion method		
Scintillator	CsI (Cesium Iodide)		
External dimensions (WxDxH) / Weight	AeroDR 1417HQ : 383.7×460.2×15.9 mm (15.1×18.1×0.6inch) / 2.9kg (6.4lb) AeroDR 1417S : 383.7×460.2×15.9 mm (15.1×18.1×0.6inch) / 2.8kg (6.2lb) AeroDR 1717HQ : 459.8×460.2×15.9 mm (18.1×18.1×0.6inch) / 3.6kg (7.9lb) AeroDR 1012HQ : 281.8×333.0×15.9 mm (11.1×13.1×0.6inch) / 1.7kg (3.8lb)		
Pixel size	175μm		
Image area size	AeroDR 1417HQ : 348.95×425.25 mm (13.7×16.7inch) (1,994×2,430 pixels) AeroDR 1417S : 348.95×425.25 mm (13.7×16.7inch) (1,994×2,430 pixels) AeroDR 1717HQ : 424.9 ×424.9 mm (16.7×16.7inch) (2,428×2,428 pixels) AeroDR 1012HQ : 425.7 ×296.8 mm (9.7×11.7inch) (1,404×1,696 pixels)		
AD conversion	16 bit (65,536 gradients)		
Usable grid frequency	40lp/cm, 34lp/cm		
Durability*10	Point load : 150kg@φ40mm, Face load : 300kg@ effective image area overall		
Communication	Dedicated wired Ethernet connection / Wireless LAN (IEEE802.11a compliant)		
W-LAN encryption	Wireless encryption method : AES / Authentication method : WPA2-PSK		
Cycle time*12	AeroDR 1417HQ/S : Approx. 8 seconds when connected with the dedicated wired connection Approx. 12 seconds when connected with wireless LAN connection AeroDR 1717HQ : Approx. 8 seconds when connected with the dedicated wired connection Approx. 14 seconds when connected with wireless LAN connection AeroDR 1012HQ : Approx. 7 seconds when connected with the dedicated wired connection Approx. 9 seconds when connected with wireless LAN connection		
Operating time*13	AeroDR 1417HQ/S : 211 images/5.8 hours AeroDR 1717HQ : 189 images/5.2 hours AeroDR 1012HQ : 146 images/4.0 hours *Under conditions that the AeroDR system is connected to an X-ray system and the interval between studies is five minutes and three images are captured in each study, assuming 20 seconds for each exposure to position a patient.		
Battery charging time empty to full	AeroDR 1417HQ/AeroDR 1417S/AeroDR 1717HQ Within 30 minutes (When using AeroDR Battery Charger) Within 60 minutes (When using AeroDR Battery Charger2) Within 60 minutes (When using the dedicated wired cable) AeroDR 1012HQ Within 30 minutes (When using AeroDR Battery Charger2) Within 30 minutes (When using the dedicated wired cable)		
Battery duration in standby status*14	AeroDR 1417HQ/S : Approx. 16 hours AeroDR 1717HQ : Approx. 15 hours AeroDR 1012HQ : Approx. 7.6 hours		
Battery expected life time	Same as the AeroDR panel life time		
Recommended storage and usage environment conditions	When operating : (Temperature) 10 to 30°C (30 to 86°F) (Humidity) 35 to 80% RH (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa * Limit continuous use in a hot and humid environment (35 to 37°C/95% or lower) of an incubator to within 25 minutes. When not operating : (Temperature) -10 to 40°C (14 to 104°F) (Humidity) 20 to 90% RH (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa In storage/transport : (Temperature) -20 to 50°C (-4 to 122°F) (Humidity) 20 to 90% RH (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa * However, the performance warranty period when storing at 50°C is 6 months after packing.		

AeroDR Detector (AeroDR SYSTEM 2)

Model name	AeroDR 2 1417HQ (AeroDR P-51) / AeroDR 2 1417S (AeroDR P-52)	
Detection method	Indirect conversion method	
Scintillator	CsI (Cesium Iodide)	
External dimensions (WxDxH) / Weight	AeroDR 2 1417HQ : 383.7×460.2×15.9mm (15.1×18.1×0.6 inch) / 2.6kg (5.7 lb) AeroDR 2 1417S : 383.7×460.2×15.9mm (15.1×18.1×0.6 inch) / 2.5kg (5.5 lb)	
Pixel size	175μm	
Image area size	348.95×425.25mm (13.7×16.7inch) (1,994×2430 pixels)	
AD conversion	16 bit (65,536 gradients)	
Usable grid frequency	40 lp/cm, 34 lp / cm	
Durability*10	Point load : 150kg@φ40mm, Face load : 300kg@ effective image area overall	
Water resistance*11	IPX6	
Communication	Dedicated wired Ethernet connection / Wireless LAN (IEEE802.11a / b / g / n compliant)	
W-LAN encryption	Wireless encryption method : AES / Authentication method : WPA2-PSK	
Cycle time*12	Approx. 4 seconds with dedicated wired connection Approx. 6 seconds with wireless LAN connection	
Operating time*13	AeroDR 2 1417HQ : 300 images/8.2hours AeroDR 2 1417S : 150 images/4.1hours *Under conditions that the AeroDR system is connected to an X-ray system and the interval between studies is five minutes and three images are captured in each study, assuming 20 seconds for each exposure to position a patient.	
Battery charging time empty to full	AeroDR 2 1417HQ Within 30 minutes (When using the AeroDR Battery Charger) Within 30 minutes (When using the AeroDR Battery Charger2) Within 30 minutes (When using the dedicated wired cable) AeroDR 2 1417S Within 13 minutes (When using the AeroDR Battery Charger2) Within 13 minutes (When using the dedicated wired cable)	
Battery duration in standby status*14	AeroDR 2 1417HQ : Approx. 20 hours AeroDR 2 1417S : Approx. 10 hours	
Battery expected life time	Same as the AeroDR panel life time	
Recommended storage and usage environment conditions	When operating : (Temperature) 10 to 30°C (30 to 86°F) (Humidity) 35 to 80% RH (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa * Limit continuous use in a hot and humid environment (35 to 37°C/95% or lower) of an incubator to within 25 minutes. When not operating : (Temperature) -10 to 40°C (14 to 104°F) (Humidity) 20 to 90% RH (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa In storage/transport : (Temperature) -20 to 50°C (-4 to 122°F) (Humidity) 20 to 90% RH (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa * However, the performance warranty period when storing at 50°C is 6 months after packing.	

Regarding the tested values listed above, measurement methods are followed by the standards of KonicaMinolta.
*10 Dead loading does not give affection to processed image or panel. Robustness against loading of detector is not to provide any guarantees against damage or breakage. *11 When a shock such as drop or hit on the floor is loaded on the detector, water resistance performance (Value as IPX6) may be lost. And the water resistance performance of the detector is not to provide any guarantees about perfect water resistance or against damage or breakage. *12 Specifications may vary depending on system configuration or environment. The specifications described above are under the conditions that detector is connected to an X-ray generator. *13 The specifications are based on the conditions of 3 exposures within one study and an interval time between studies of 5 minutes. It takes 20 seconds for positioning. Under the condition that the detector is linked with an X-ray generator. When connected to CS-7 image processing workstation. *14 The specifications described above are based on full battery charge and may vary depending on system configuration or environment.

Specifications

AeroDR Battery Charger2

Power	AC 100 / 110 / 115 / 120 / 200 / 220 / 230 / 240 V ± 10% Single Phase 50 / 60 Hz
External dimensions (W×D×H)	474.2×200×206.7mm (18.7× 7.9× 8.1 inch)
Weight	6kg (13.2lb)



AeroDR Interface Unit2

Amount of connectable AeroDR Detectors	Wired connection : Up to 2 Wireless connection : Up to 4 <small>AeroDR Access Point is necessary when operating wireless.</small>
Power requirements	AC 100 / 110 / 115 / 120 / 200 / 220 / 230 / 240V ± 10%, Single phase 50 / 60Hz
Power consumption	With the AeroDR Detector connected : Approx.160VA (100-240 V) Without the AeroDR Detector connected : Approx. 33VA (100-240 V)
External dimensions (W×D×H)	460×180×285mm (18.1×7.1×11.2 inch)
Weight	12.5kg (27.6lb)



AeroDR Generator Interface Unit2

Power requirements	When the AC adapter is used : Supplied from the dedicated AC adapter. When the AeroDR Interface Unit is used : Supplied from the AeroDR Interface Unit via the Ethernet cable.
Power supply when using the dedicated AC adapter	AC 100 / 110 / 115 / 120 / 200 / 220 / 230/240V ± 10%, Single phase 50 / 60Hz
Power consumption when using the dedicated AC adapter	72VA (100-240V)
External dimensions (W×D×H)	210×150×50mm (8.3×5.9×2.0 inch)
Weight	0.9kg (2.0lb)



AeroDR Battery Charging Unit

Power requirements	AC 100 / 110 / 115 / 120 / 200 / 220 / 230 / 240V ± 10% Single phase 50/60Hz (When dedicated AC adaptor is used)
Power consumption	Approx. 168 VA (100 to 240V)
External dimensions (W×D×H)	90×125×30mm (3.5×4.9×1.2 inch)
Weight	0.38kg (0.8lb)
AeroDR BC unit AC adapter specifications	Product name : AC Adapter (Model Number. Cincon Electronics Co.,Ltd. TR60M48) Dimensions : 132.0×58.0×30.5mm (5.2×2.3×1.2 inch) Input : AC 100-240 V 1.5-0.7A 47-63Hz Output : DC 48 V 1.25 A



Control Station CS-7

Image processing
Image output
DICOM support
Readable devices

Auto-gradation processing, Frequency processing (F processing), Equalization processing (E processing), Hybrid processing (HF processing - HE processing), Hybrid smoothing processing (HS processing) Grid removal processing, Automatic exposure field recognition processing, Tube and Gauze image enhancement (option), Intelligent Grid (option)

Host : max 4 ch / Printer : max 2 ch

DICOM Storage SCU, DICOM basic Grayscale Print Management SCU, DICOM Modality Worklist Management SCU, DICOM Modality Performed Procedure Step SCU

AeroDR detector
REGIUS MODEL 170, REGIUS MODEL 190, REGIUS MODEL 210, REGIUS MODEL 110
REGIUS MODEL 110HQ *15, REGIUS SIGMA, REGIUS SIGMA 2
*15 It is not FDA cleared in the United States.



Imaging Station ImagePilot

Image processing function
Viewer function display
Viewer function measurement
Viewer function annotation
Offline image link
Software features

Integral Processing, Automatic Processing Parameter Study

Grayscale, Window Change, Pan, Zoom, Magnifying Glass, Cine, Comparison Display

VHS, Ratio of heart and chest, Distance Between 2 Points, Angle between 3 Points, Cobb Angle, Rectangle area, Ellipse area, Polygon area

Line, Rectangle, Circle, Ellipse, Freehand, Text

Media Input / Output (PDI, DICOM, JPEG, Bitmap)

Patient Registration
Image Acquisition
Automatic Image Processing with Learning Function
Image Review – including magnification, annotations, measurements, layout and window leveling tools
Export JPEG images to Media (CD, DVD and USB drive)
Export DICOM images to CD/DVD with DICOM PDI format and optional PDI Viewer
Import DICOM or JPEG images from Media (CD, DVD and USB drive)
Windows Printing on Paper
HL7, ADT and ORM
Remote access
DICOM Printing
DICOM Q/R, SCU and SCP
DICOM MWL
DICOM Send to PACS

* Veterinary DICOM support.

