



KONICA MINOLTA

WIRELESS DIGITAL RADIOGRAPHY SYSTEM

AeroDR3

1417HD / 1717HD / 1012HQ



AeroDR3
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2 WIRELESS DIGITAL RADIOGRAPHY SYSTEM



KonicaMinolta's next generation wireless FPD
AeroDR 3 1417HD / 1717HD / 1012HQ exceeds
the advantages of our current AeroDR series and incorporates
new features. It is the top-of-the-line model in the AeroDR series.

- High Image Quality
- High Resolution, High DQE, and Lower Radiation Doses
-
- Lightweight and Robust Structure
-
- Powerful and Reliable Workflow
- Rapid cycle time, Selectable pixel size,
and Updated AeroSync® automatic exposure detection.

AeroDR 3



AeroDR 3 1417HD

Light weight at 2.6kg (5.7 lb)

■
Rapid cycle time of 4 s
in wireless operation*1



AeroDR 3 1717HD

Light weight at 3.2kg (7.0 lb)

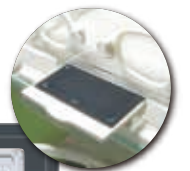
■
Rapid cycle time of 4 s
in wireless operation*1



AeroDR 3 1012HQ

Light weight at 1.5kg (3.3 lb)

■
Rapid cycle time of 4 s
in wireless operation*1



*1 Specifications may vary depending on system configuration or environment. The specifications described above assume that each AeroDR 3 panel (pixel size is select 200µm) is connected to an X-ray generator.

High Image Quality

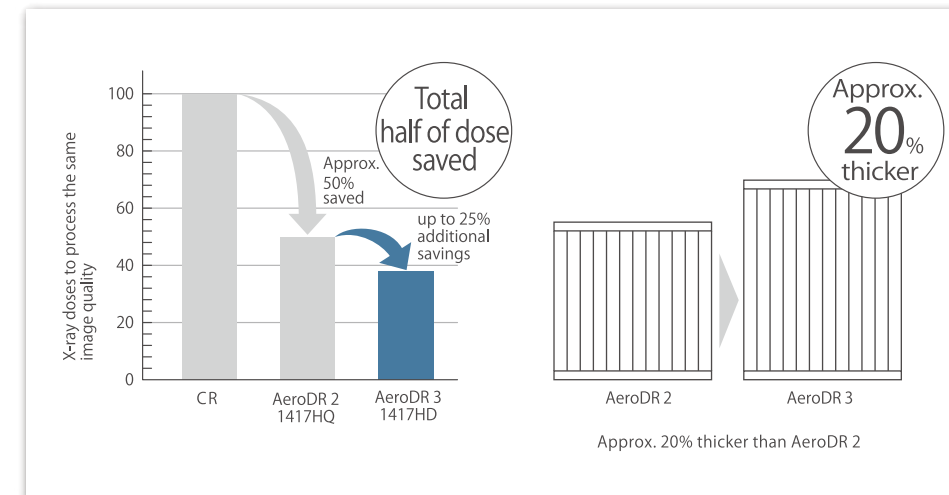


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High DQE and Lower Doses

KonicaMinolta introduces the latest technological advances with the AeroDR 3 High sensitivity TFT panel. The thicker CsI scintillator and new ROIC can reduce the electrical noise level by 50% or more. Now we can provide patients and AeroDR users with high detector quantum efficiency (DQE) and half of dose with AeroDR 3 when compared with previously cleared KonicaMinolta systems.



Improved granularity



AeroDR 3 1417HD



AeroDR 2 1417HQ

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Thicker CsI Scintillator

The scintillator material is evenly distributed from the bottom to the top of the panel, and it is more than 20% thicker than the AeroDR 2 1417HQ panel. This helps provide the high DQE.

175µm 100µm

AeroDR 3 (100µm)

AeroDR 2 (175µm)

- 100µm pixels eliminate the effect of pixelation on the image, even under high power magnification in the viewer.
- 100µm pixels make it possible to display micro structures within the image.

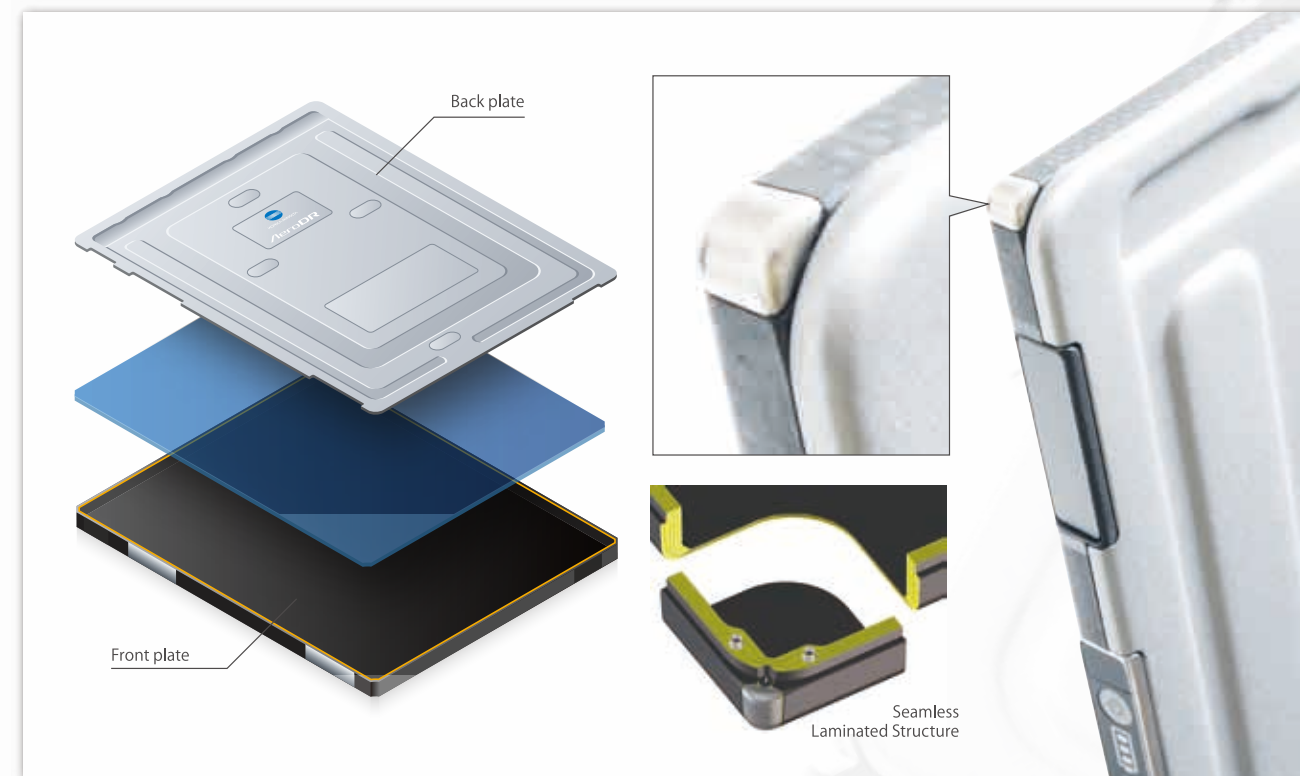
Performance of 100µm pixels

The pixels are 100µm across, and this small size helps ensure clear images.

Lightweight and Robust Structure

Super Monocoque Housing Structure

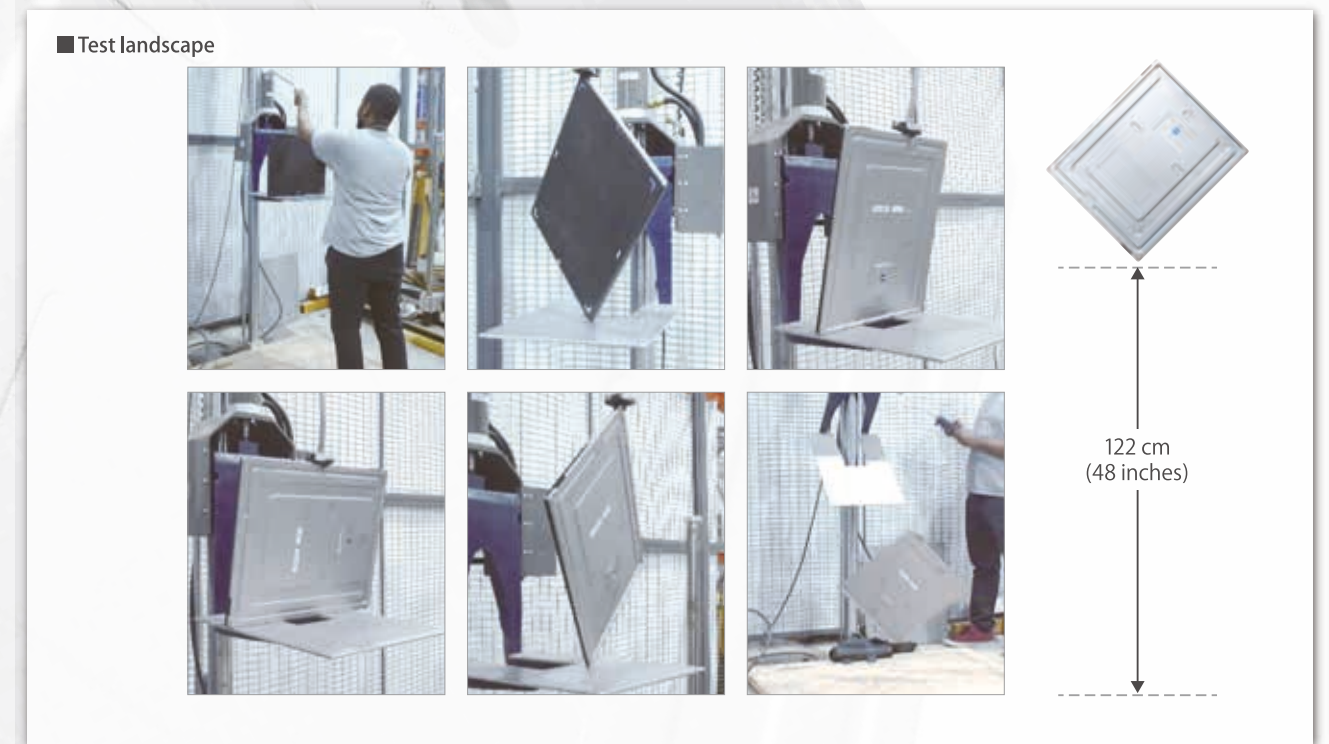
KonicaMinolta has developed a new detector design to provide easy handling and high durability.



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Each AeroDR 3 panel has passed the MIL-STD-810G drop strength test

MIL-STD-810G is defined by the U.S. Department of Defense. Drop strength is one of the test items. (Drop strength test: it is dropped on a total of 26 places once each from the height of 122 cm (48 inches). The 26 places are 6 planes above plywood, 12 ridgelines, and 8 vertices.)

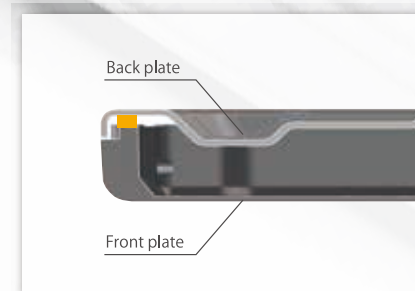


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Sustain IPX6 waterproof compliance even after the panel was dropped from height of 1.0m.

The AeroDR 3 panel has cleared the durability test for water resistance after dropping it from a height of 1m. The structure of the AeroDR 3 panel does not allow liquids to penetrate or damage the main components.

※ The internal test condition is that the AeroDR 3 1417HD main body is dropped once onto a concrete floor that has a 2mm-thick sheet laid on it, after which the water resistance test is conducted. Depending upon the operating conditions and detector status, the IPX6 water resistance may be lost.



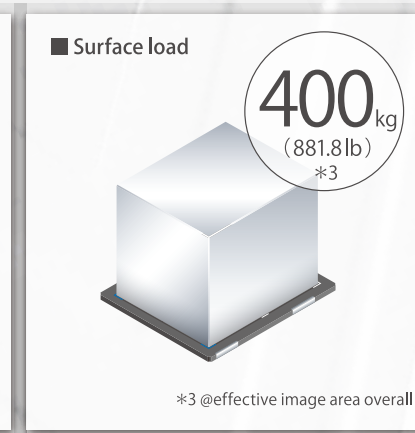
Enhanced waterproof performance

Waterproof performance has been enhanced by the structure enclosed by waterproof packing.



Load Resistance

The AeroDR 3 panel has undergone a variety of internal tests based on some assumed extreme operating scenarios.



Bend Resistance

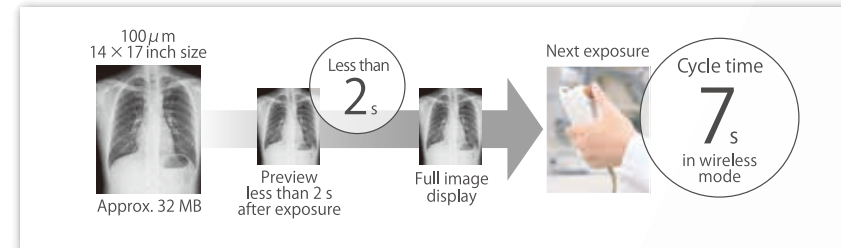
KonicaMinolta assumed an operating scenario in which a 130 kg patient lies on the AeroDR 3 panel main body for a bedside exposure, and designed the detector such that it would not affect the processed image or suffer internal damage.

Powerful and Reliable Workflow

Its sophisticated functions will enrich your daily examination workflow

Rapid Cycle Time

The AeroDR SYSTEM 3 can handle large image data and provide short cycle times even though the image data is taken at 100 μm pixels.



※ With 200 μm pixels and in wireless mode, the cycle time is 4 s.

High Performance Power Cell

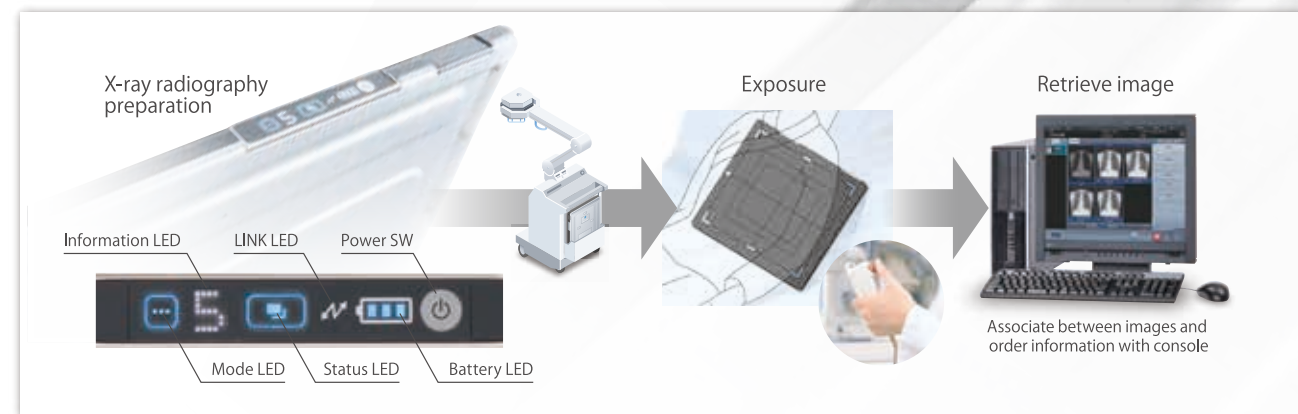
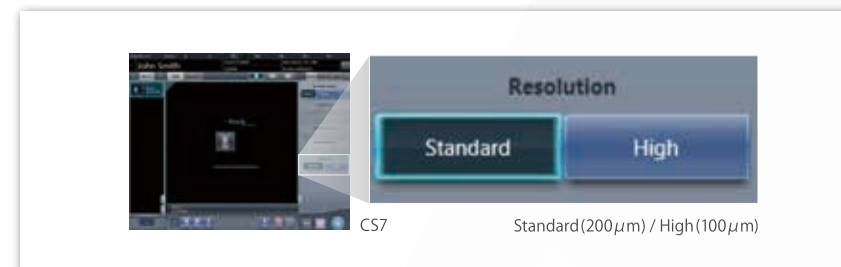
The AeroDR 3 1417HD is powered by two lithium ion capacitors for high performance. The Lithium ion capacitors charge from 0 to 100% in 30 min.*5

*5 When using the AeroDR Battery Charger2 or interface cable 3



The pixel size is selectable between 100 μm or 200 μm .

AeroDR 3 users can select a pixel size of 100 μm or 200 μm before taking an X-ray. This allows users to control the image data size if they need to save storage space. After taking the X-ray, the CS-7 image-processing workstation has options to output images to save data space.



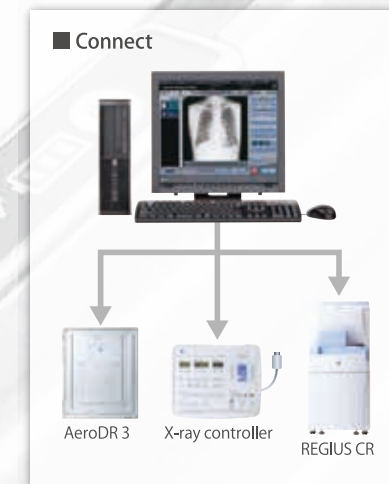
X-ray Radiography Possible without Console

"AeroStorage" X-ray Radiography in Emergencies. Switch the AeroDR 3 to Aero Storage mode, and perform exposure X-ray without a console. The number of saved images is 100.

Integrated control station CS-7

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

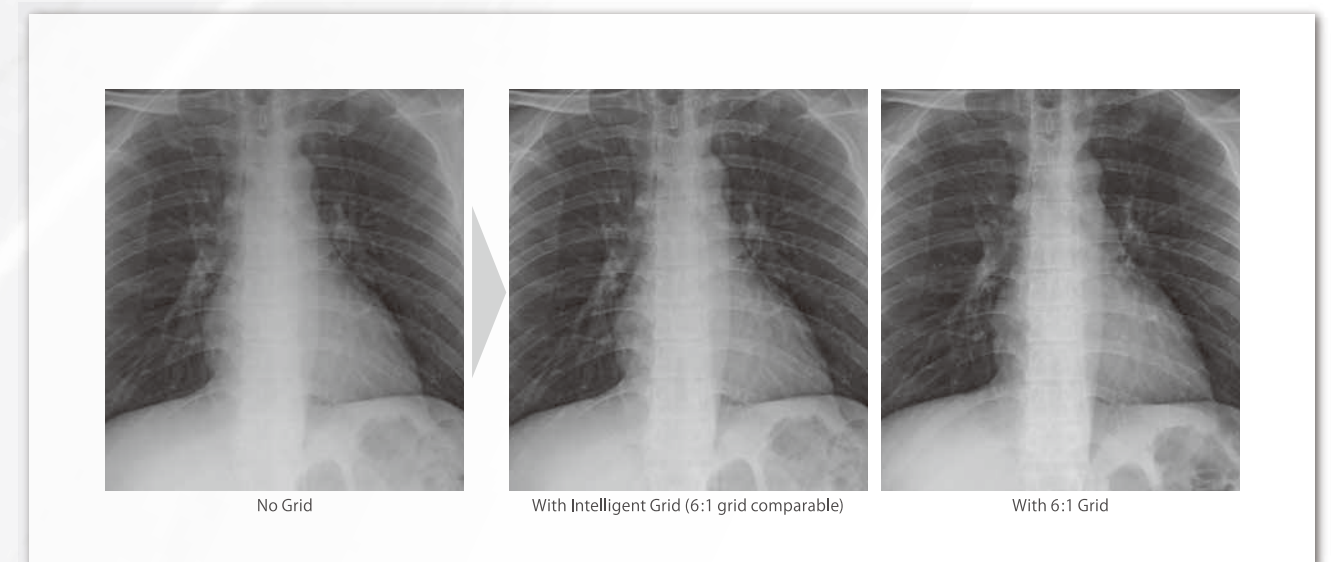
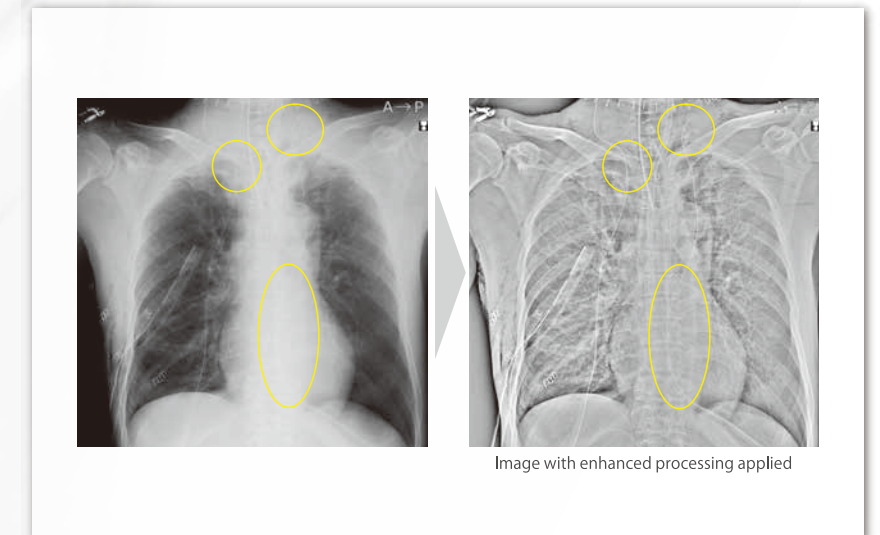
(Please contact your KonicaMinolta sales representative regarding which devices can connect to CS-7)



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



※Optional license is necessary to use this function

Intelligent Grid

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 it to perform an exam. Three types of parameters are available from comparable grid ratios; 3:1/6:1/8:1/10:1/12:1.

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

New image processing engine "REALISM" × AeroDR 3 1417HD / 1717HD / 1012HQ



X-ray images to be more stereoscopic and clearer by "REALISM"

- 1 Depict whole image more clearly while also maintaining the contrast
- 2 Optimize the high definition pixel size 100 μ m of AeroDR 3 series through sharpness enhancing technology.
- 3 Control the granularity deterioration with updated HE/HF processing

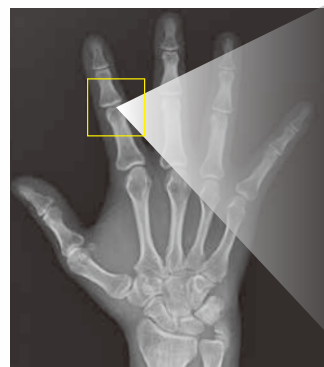
High sharpness technology which is maximized panel resolution

RF processing (frequency processing of REALISM processing)

REALISM processing

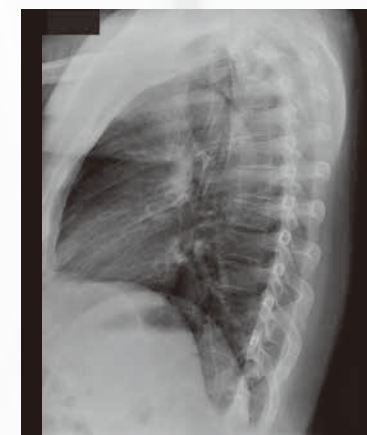


Hybrid processing (Conventional)



Both technology to draw whole image + maintain contrast

RE processing (compression processing of REALISM processing), introducing New LUT

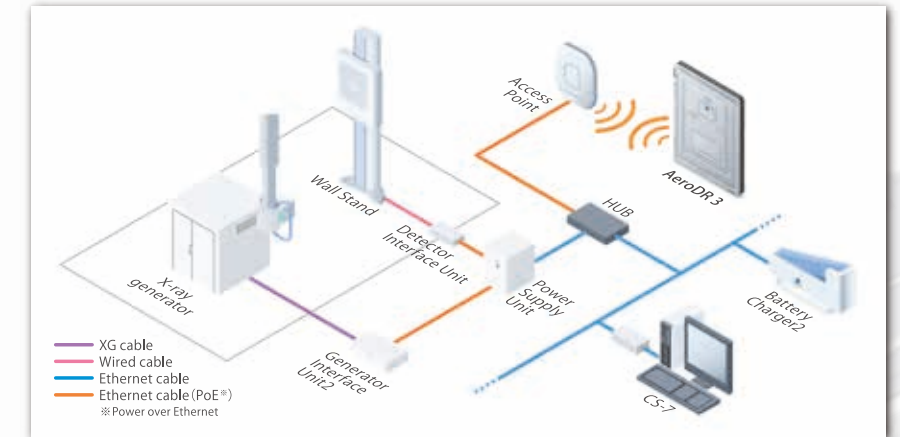


AeroDR SYSTEM 3 Specifications



AeroDR SYSTEM 3 *6

| | | AeroDR 3 1417HD | AeroDR 3 1717HD | AeroDR 3 1012HQ |
|-------------------------------------|--|---|---|---|
| Product name (model name) *7 | | AeroDR 3 1417HD (P-61) | AeroDR 3 1717HD (P-71) | AeroDR 3 1012HQ (P-81) |
| Detection method | | Indirect conversion method | Indirect conversion method | Indirect conversion method |
| Scintillator | | CsI | CsI | CsI |
| External dimensions (W×D×H) | | 384 × 460 × 15mm (15.1 × 18.1 × 0.6 inches) | 460 × 460 × 15mm (18.1 × 18.1 × 0.6 inches) | 282 × 333 × 15mm (11.1 × 13.1 × 0.6 inches) |
| Weight | | 2.6kg (5.7 lb) | 3.2kg (7.0 lb) | 1.5kg (3.3 lb) |
| Pixel size | | 100 / 200 μm | 100 / 200 μm | 100 / 200 μm |
| Image area size | | 348.8 × 425.6mm (13.7 × 16.8 inches) | 424.8 × 424.8mm (16.7 × 16.7 inches) | 245.6 × 296.8mm (9.6 × 11.6 inches) |
| AD conversion | | 16 bit (65,536 gradients) | 16 bit (65,536 gradients) | 16 bit (65,536 gradients) |
| Usable grid frequency | | 60 / 40 / 34 lp/cm | 60 / 40 / 34 lp/cm | 60 / 40 / 34 lp/cm |
| Communication | | Dedicated wired Ethernet connection / Wireless LAN (IEEE802.11a / 802.11n compliant) | Dedicated wired Ethernet connection / Wireless LAN (IEEE802.11a / 802.11n compliant) | Dedicated wired Ethernet connection / Wireless LAN (IEEE802.11a / 802.11n compliant) |
| W-LAN encryption | | Wireless encryption method: AES / Authentication method: WPA2-PSK | Wireless encryption method: AES / Authentication method: WPA2-PSK | Wireless encryption method: AES / Authentication method: WPA2-PSK |
| Auto Exposure Detection | | Available (AeroSync) | Available (AeroSync) | Available (AeroSync) |
| Expected product life time | | Same as the lifetime of AeroDR 3 1417HD main body | Same as the lifetime of AeroDR 3 1717HD main body | Same as the lifetime of AeroDR 3 1012HQ main body |
| Durability | Point load*8 | 180 kg @ φ40 mm | 180 kg @ φ40 mm | 180 kg @ φ40 mm |
| | Face load | 400 kg @ effective image area overall | 400 kg @ effective image area overall | 400 kg @ effective image area overall |
| | MIL-STD | Acquisition | Acquisition | Acquisition |
| | Water resistance*9 | IPX6 including power cell | IPX6 including power cell | IPX6 including power cell |
| Cycle time*10 | 100 μm | Approx. 6s with dedicated wired connection Approx. 7s with wireless LAN connection | Approx. 6s with dedicated wired connection Approx. 7s with wireless LAN connection | Approx. 5s with dedicated wired connection Approx. 5s with wireless LAN connection |
| | 200 μm | Approx. 4s with dedicated wired connection Approx. 4s with wireless LAN connection | Approx. 4s with dedicated wired connection Approx. 5s with wireless LAN connection | Approx. 4s with dedicated wired connection Approx. 4s with wireless LAN connection |
| Battery performance | Operating time*11 (200 μm with wireless LAN connection) | Approx. 309 images / 8.6 h | Approx. 276 images / 7.6 h | Approx. 165 images / 4.5 h |
| | Charging time empty to full Maximum stand by time*12 | Within 30 min Approx. 13 h | Within 30 min Approx. 12 h | Within 20 min Approx. 6 h |



In-room solution: One of KonicaMinolta's proposals for an in-room solution is to retrofit DR systems which can utilize existing X-ray systems. We can provide high image quality and rapid cycle time and eliminate the need to handle CR cassettes. When a simple configuration is suitable for small X-ray rooms, KonicaMinolta can propose the AeroSync in-room system with a minimum configuration such as a panel, console, AP and battery charger.



Portable system solution: KonicaMinolta has two solutions to digitize analogue portable X-ray units. One is a proposal using a portable upgrade kit. When a simple configuration is suitable for customers, we can propose a simple AeroSync portable solution with only a panel, console and small AP. Customers can carry the system to the parking spot of the portable X-ray unit easily.



Mobile solution: KonicaMinolta has suitable AeroDR solution for X-ray studies outside HP such as home care and disaster medicine. The system configuration is made very compact by AeroSync. Users can carry the whole AeroDR system packed in a carrying bag to exposure site. After arriving at the exposure site, users can unpack the AeroDR system and prepare the X-ray exams quickly.

*6 AeroDR SYSTEM 3 is the commercial product name of SKR 3000. *7 AeroDR 3 1417HD / AeroDR 3 1717HD / AeroDR 3 1012HQ is the commercial name of P-61 / P-71 / P-81 of SKR3000. With regard to the tested values listed above, measurement methods follow KonicaMinolta standards. *8 Dead loading does not affect the processed image or panel. Robustness against loading of the AeroDR 3 1417HD / AeroDR 3 1717HD / AeroDR 3 1012HQ does not provide any guarantees against damage or breakage. 1717HD / AeroDR 3 1012HQ does not provide any guarantees of perfect water resistance, nor that it cannot be damaged or broken. *9 The water resistance performance of AeroDR 3 1417HD / AeroDR 3 specifications described above assume that AeroDR 3 1417HD / AeroDR 3 20s to position the patient. This also assumes that the AeroDR 3 1417HD / AeroDR 3 1717HD / AeroDR 3 1012HQ is connected to an X-ray generator. *10 Specifications may vary depending on system configuration or environment. *11 The specifications assume that 3 exposures are taken within one study and that the time between studies is 5 min. They also assume that it takes 20s to position the patient. *12 The specifications described above are based on a full battery charge and may vary depending on system configuration and environment.

| Recommended storage and usage environment conditions | When operating : | (Temperature) 10 to 35°C (30 to 95 °F) (Humidity) 35 to 80% (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa |
|--|--------------------------|---|
| | When not operating : | (Temperature) -10 to 40°C (14 to 104 °F) (Humidity) 20 to 90% (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% (ensure no water condensation) (Atmospheric pressure) 700 to 1060 hPa |

* Performance warranty period when storing at 50°C is 6 months after packing.

AeroDR SYSTEM 3 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 × 206.7 mm (18.7 × 7.9 × 8.1 inches) |
| Weight | 6 kg (13.2 lb) |



Power Supply Unit

| | |
|---------------------------------|---|
| External dimensions (W × D × H) | 185 × 105 × 150 mm (7.3 × 4.1 × 5.9 inches) |
| Weight | 2.0 kg (4.4 lb) |
| Power requirements | AC 100–240 V ± 10% Single phase 50/60 Hz |
| LAN interface | 3 ports |



Detector Interface Unit

| | |
|---------------------------------|---|
| External dimensions (W × D × H) | 60 × 130 × 22 mm (2.4 × 5.1 × 0.9 inches) |
| Weight | 0.3 kg (0.7 lb) |
| Power requirements | DC 24 V (When dedicated AC adapter is used) DC 48 V (When dedicated Power Supply Unit is used) |
| LAN interface | 1 port |



Interface Cable 3

| | |
|--------|-----------------|
| Length | 8m (315 inches) |
| Weight | 1.0 kg (2.2 lb) |

AeroDR Generator Interface Unit2

| | |
|-------------------------------------|---|
| Power requirements | AC 100 / 110 / 115 / 120 / 200 / 220 / 230 / 240 V ± 10% Single phase 50/60Hz |
| Power consumption | Approx. 72VA (100–240V) |
| External dimensions (W × D × H) | 210 × 150 × 50 mm (8.3 × 5.9 × 2.0 inches) |
| Weight | 0.9 kg (1.9 lb) |
| Dedicated AC adapter specifications | Dimensions : 78 × 50 × 35 mm (3.1 × 2.0 × 1.3 inches) Input : AC 100–240 V 0.6–0.3A 50–60Hz Output : DC 5V 3A |



Control Station CS-7

| | |
|------------------|---|
| Image processing | Auto-gradation processing, Frequency processing (F processing), Equalization processing (E processing), Hybrid processing (HF processing - HE processing), Hybrid smoothing processing (HS processing) REALISM processing, Grid removal processing, Automatic exposure field recognition processing, Tube and Gauze image enhancement (option), Intelligent Grid (option) |
| Image output | Host: max 4 ch / Printer: max 2 ch |
| DICOM support | DICOM Storage SCU, DICOM basic Grayscale Print Management SCU, DICOM Modality Worklist Management SCU, DICOM Modality Performed Procedure Step SCU |
| Readable devices | AeroDR detector REGIUS MODEL 170, REGIUS MODEL 190, REGIUS MODEL 210, REGIUS MODEL 110 REGIUS MODEL 110HQ, REGIUS SIGMA, REGIUS SIGMA2 |

