

KONICA MINOLTA

WIRELESS DIGITAL RADIOGRAPHY SYSTEM

AeroDR3

1417HD2 / 1717HD2 / 1012HQ



AeroDR3
1417HD2 / 1717HD2 / 1012HQ



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Giving Shape to Ideas



New generation,

High-Definition

High-Durability

Antibacterial

Konica Minolta's next generation wireless FPD AeroDR 3 1417HD2 / 1717HD2 / 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-Definition, High DQE and Lower Radiation Doses

Lightweight, Rugged and Safety
Antibacterial Carbon SMC Enclosure

Powerful and Reliable Workflow
Rapid Cycle Time, Selectable Pixel Size,
and Updated AeroSync® Automatic Exposure Detection.

AeroDR 3 HD2



AeroDR 3 1417HD2

Light weight at 2.6kg (5.7 lb)

Rapid cycle time of 4 s
in wireless operation*1

Antibacterial design



AeroDR 3 1717HD2

Light weight at 3.2kg (7.0 lb)

Rapid cycle time of 4 s
in wireless operation*1

Antibacterial design



AeroDR 3 1012HQ

Light weight at 1.5kg (3.3 lb)

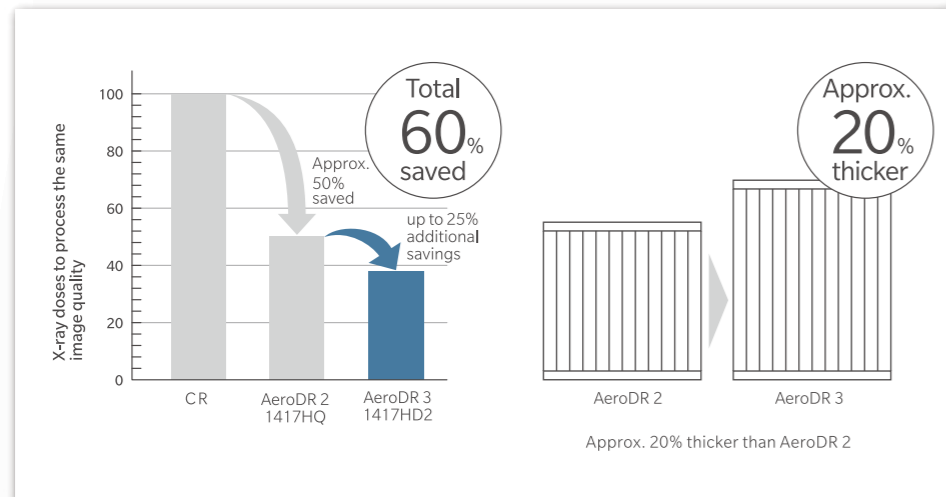
Rapid cycle time of 4 s
in wireless operation*1

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

High Image Quality

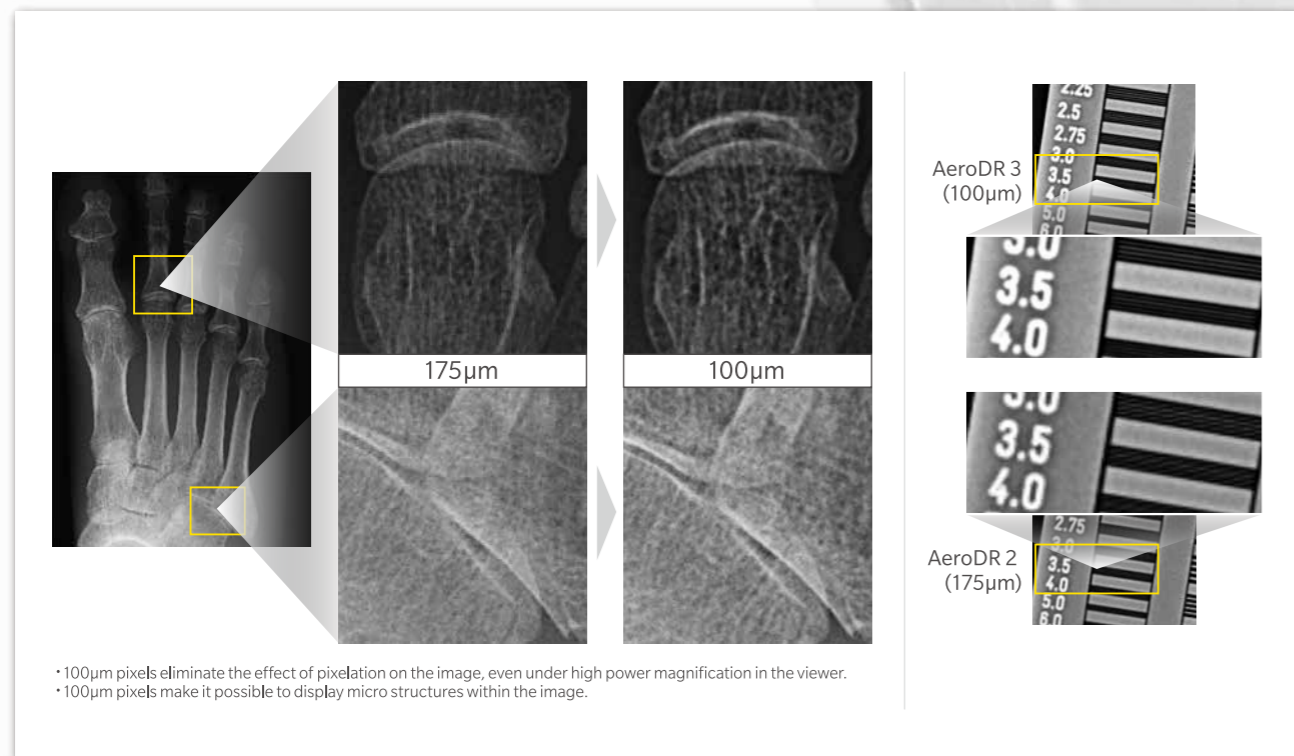
High DQE and Lower Doses

Konica Minolta 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. Now we can provide patients and AeroDR users with high Detective Quantum Efficiency (DQE) and lesser doses with AeroDR 3 when compared with previous system.



Thicker CsI Scintillator

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



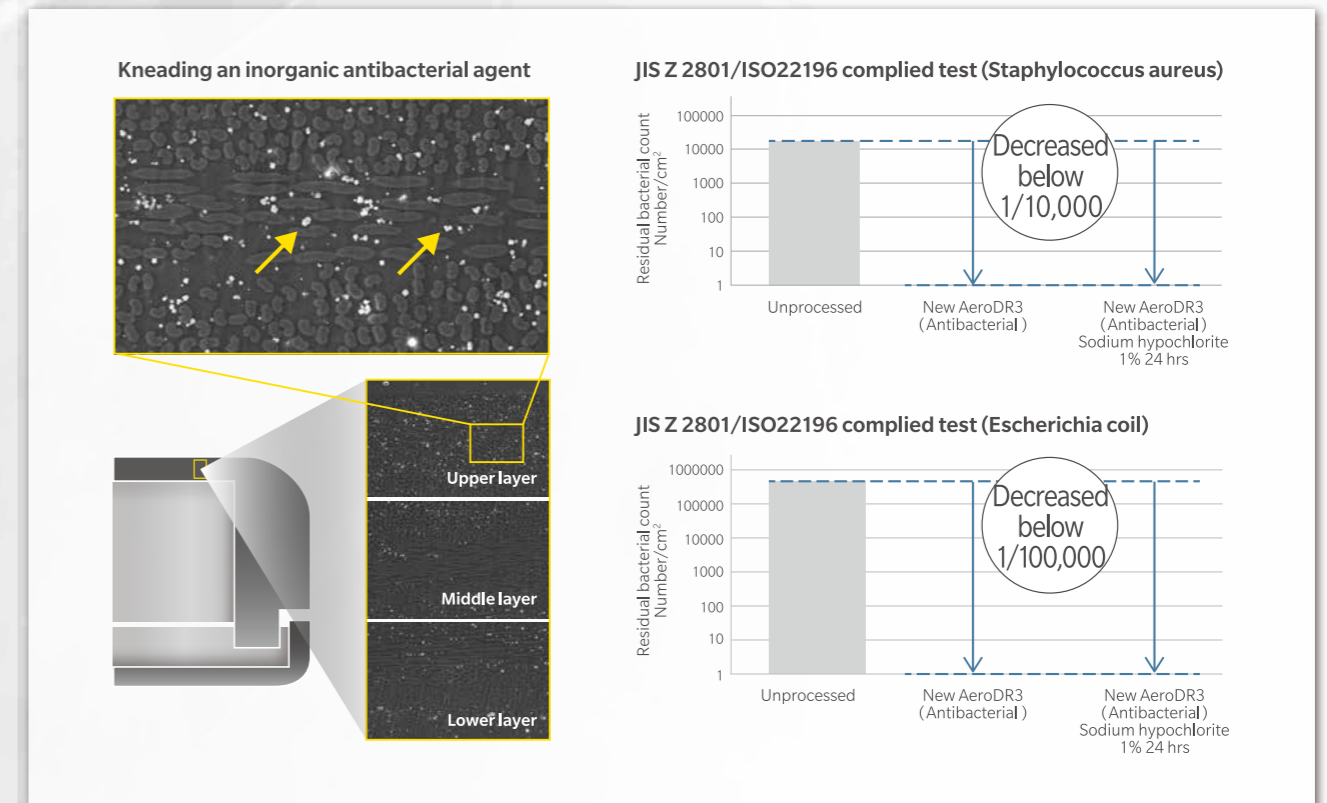
Performance of 100µm pixels

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

Antibacterial Performance that Lasts.

Antibacterial carbon enclosure that does not impact performance.*2

AeroDR3 1417HD2/1717HD2 provides a permanent antibacterial performance that does not deteriorate over time by incorporating antimicrobial agents containing Ag in its enclosure materials. Since antibacterial performance is not lost due to scratches in daily use, it can be used with confidence due to the antibacterial properties required for preventing nosocomial infections.

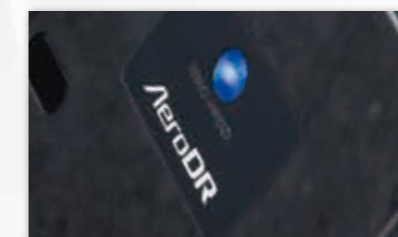


*2 The antibacterial effect is not effective to all of bacteria. Although antibacterial treatment can suppress propagation of bacteria, it does not eliminate bacteria completely or help complete prevention of infection. Bacteria may propagate when the surface has fat-and-oil or dirt adhered on it.

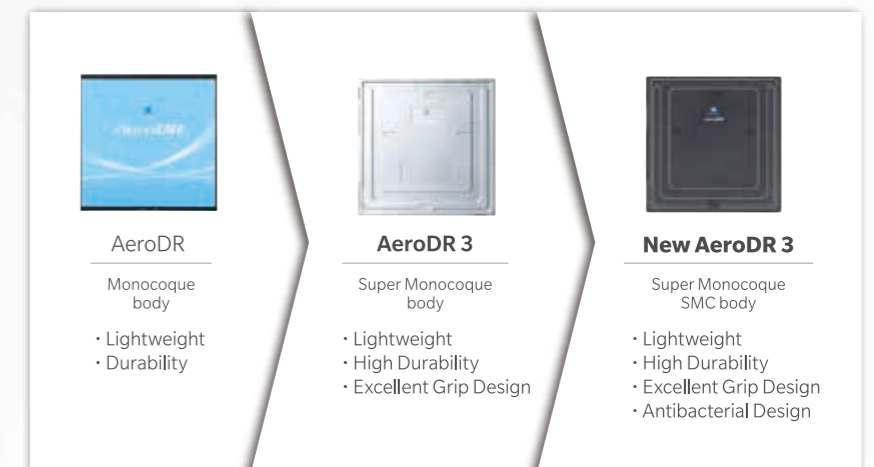
An enclosure that is lightweight, rugged and safe.

Carbon SMC (Carbon Sheet Molding Compound) is used for the enclosure material for the first time as a medical device*3. It is a material that is lightweight yet has excellent rigidity, and antibacterial agents can be kneaded into the material, achieving both high durability and safety required in the medical field.

*3 As of Mar,2021, An internal investigation



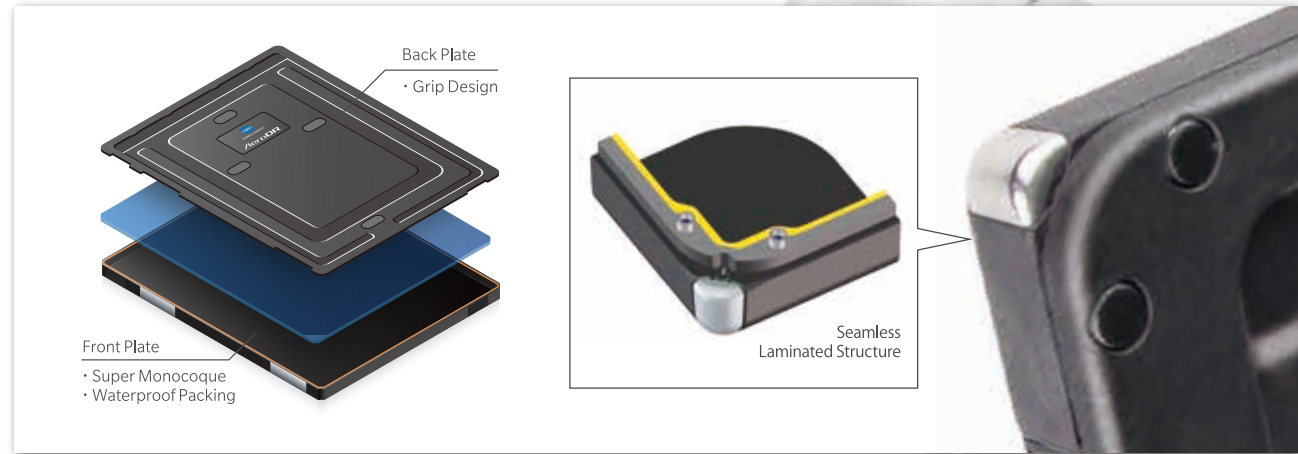
AeroDR has evolved to meet the needs of healthcare workers.



Lightweight and Rugged Structure

Super Monocoque Housing Structure

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



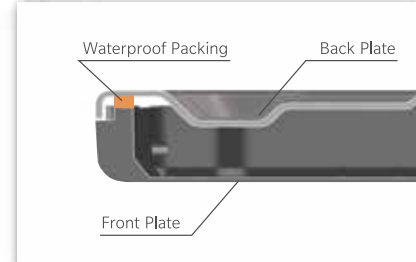
Excellent Grip Design

The depression is on the backside panel surface, helping to prevent user fingers from being caught. This excellent design makes it easier and safer to handle in your daily routine.

Sustains 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.

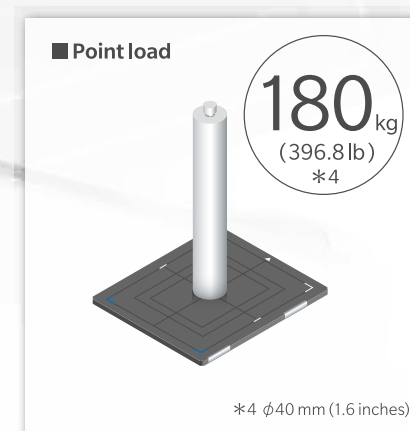
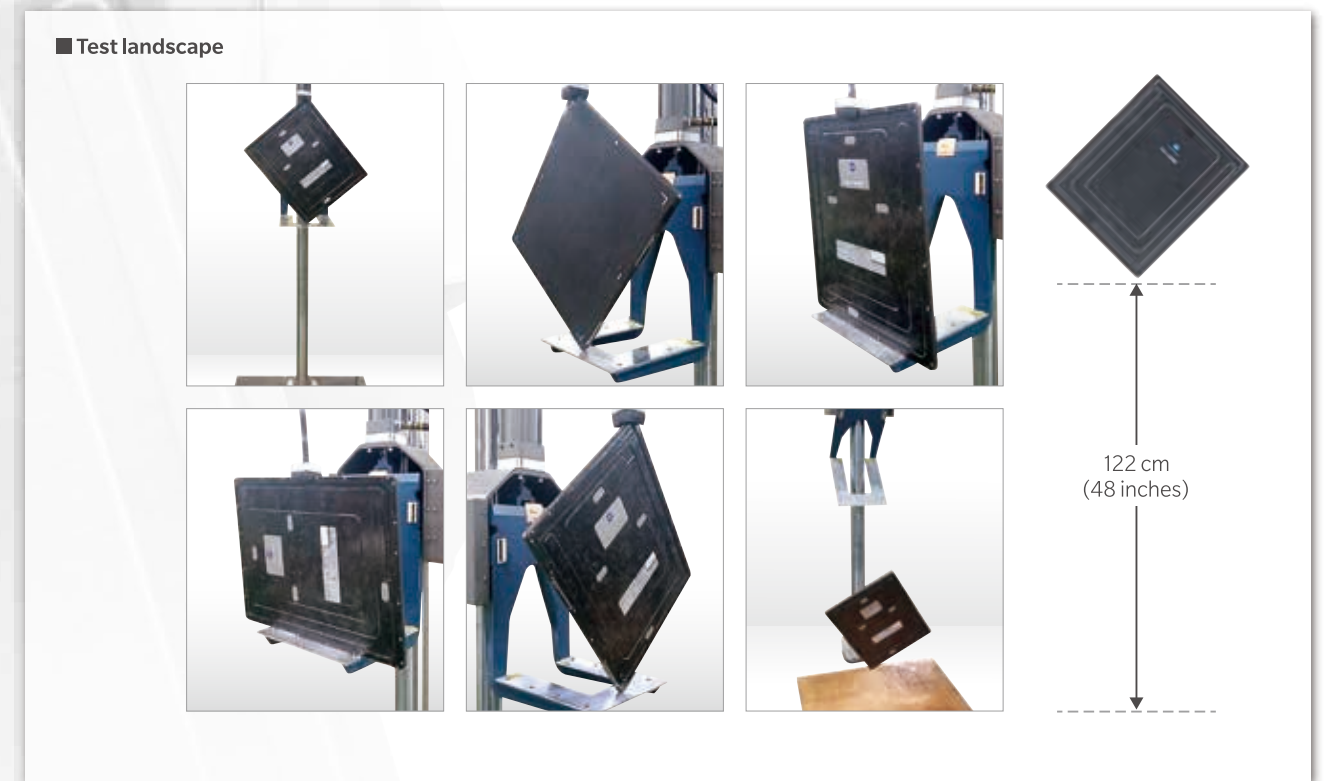
* The internal test condition is that the AeroDR 3 1417HD2 main body is dropped once onto a concrete floor that has a 2mm-thick sheet laid on it, after which the water resistance test is conducted. Depending upon the operating conditions and detector status, the IPX6 water resistance may be lost.



Enhanced waterproof performance.

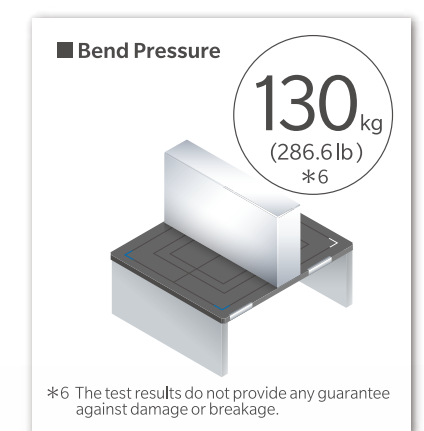
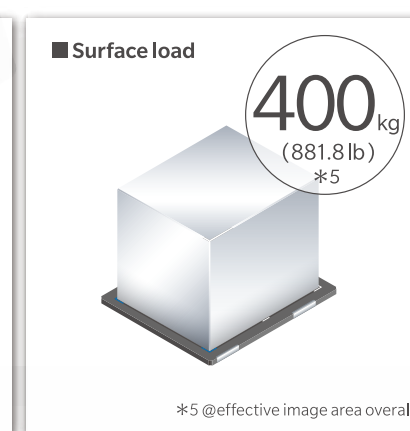
AeroDR 3 panel has passed the US Department of Defense MIL-STD-810G drop strength test

The test consists of drops from 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.



Load Resistance*

The AeroDR 3 panel has undergone a variety of internal tests based on some assumed extreme operating scenarios. * The test results do not provide any guarantee against damage or breakage.



Bend Resistance

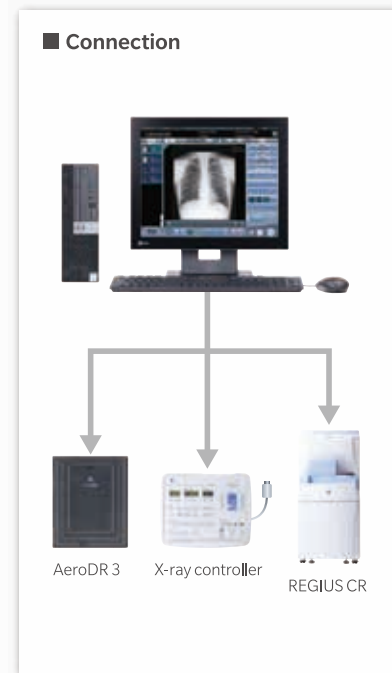
Konica Minolta assumed an operating scenario in which a 130 kg patient lies on the AeroDR 3 panel main body for a bedside exposure, and designed the detector such that it would not affect the processed image or suffer internal damage.

Powerful and Reliable Workflow

CS-7 Integrated control station

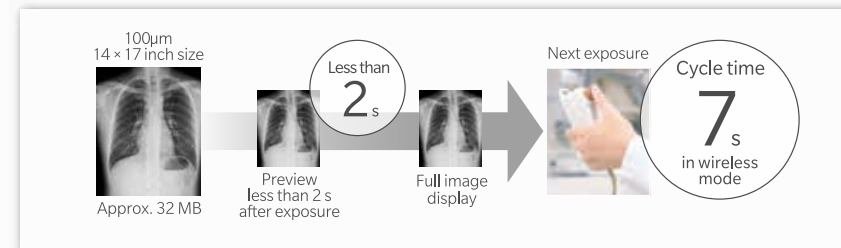
CS-7 can control multiple AeroDR panels and CR readers as a integrated console station.

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



Rapid Cycle Time

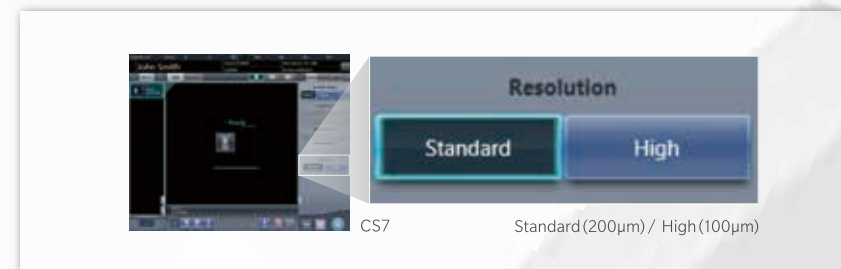
The AeroDR SYSTEM 3 can handle large image data and provide short cycle times even though the image data is taken at 100µm pixels.



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

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

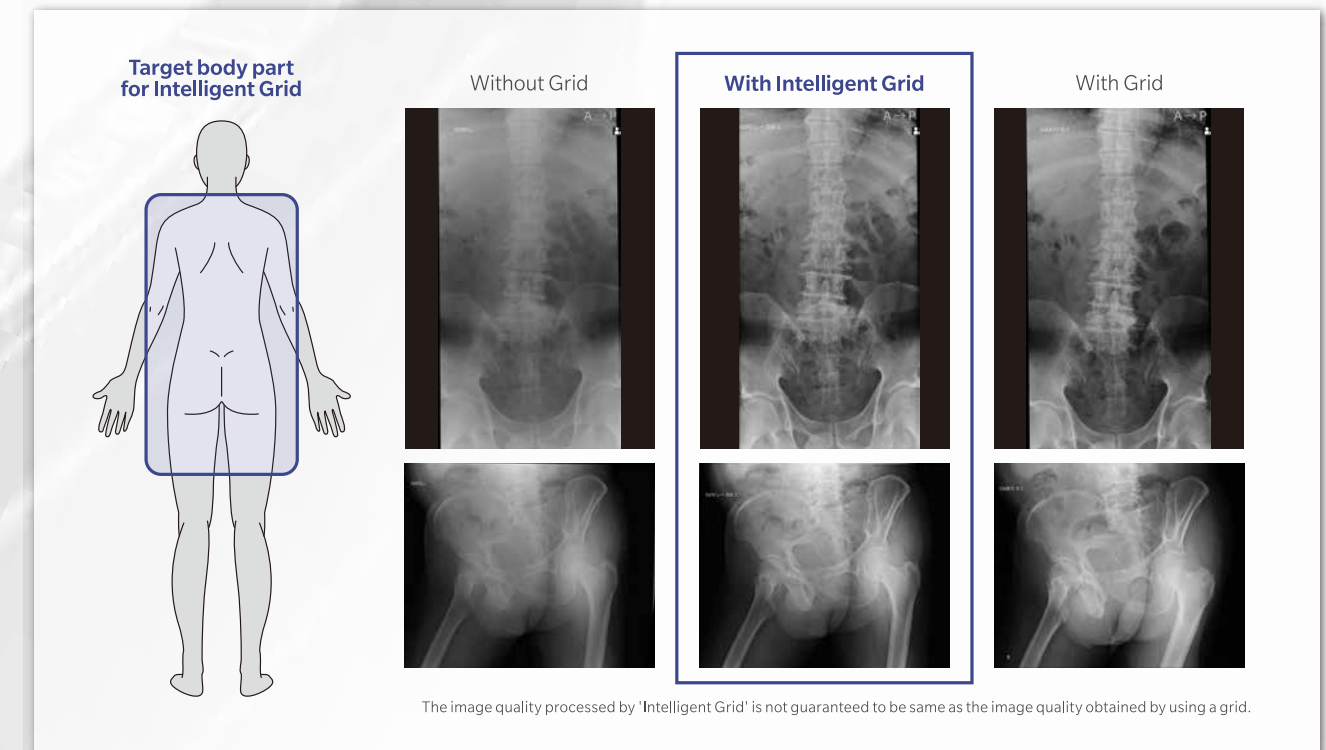
AeroDR 3 users can select a pixel size of 100µm or 200µm before taking an X-ray. This allows users to control the image data size if they need to save storage space. After taking the X-ray, the CS-7 image-processing workstation has options to output images to save data space.



Its sophisticated functions will enrich your daily examination workflow.

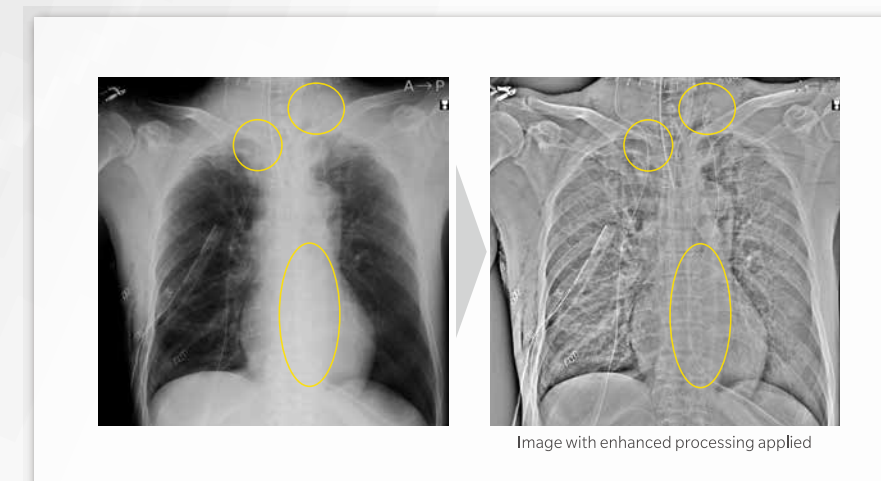
Intelligent Grid

Image processing that improves 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.



Aero Storage for bedside solution

AeroDR 3 is equipped with an "Aero Storage" function that allows you to exam with the panel alone. It can be stored up to 100 images, and it can switch from CR to DR easily at a bedside examination.



Tube and gauze image enhancement

CS-7 can highlight tube and gauze images that are difficult to detect with normal images.

Optional license is necessary to use this function

New image processing engine REALISM™ × AeroDR 3 1417HD2/1717HD2/1012HQ



X-ray images are stereoscopic and clearer

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

Increased sharpness maximizes panel resolution

RF processing (frequency processing of REALISM processing)

REALISM processing



Hybrid processing (Conventional)



Technology to draw whole image + maintain contrast

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

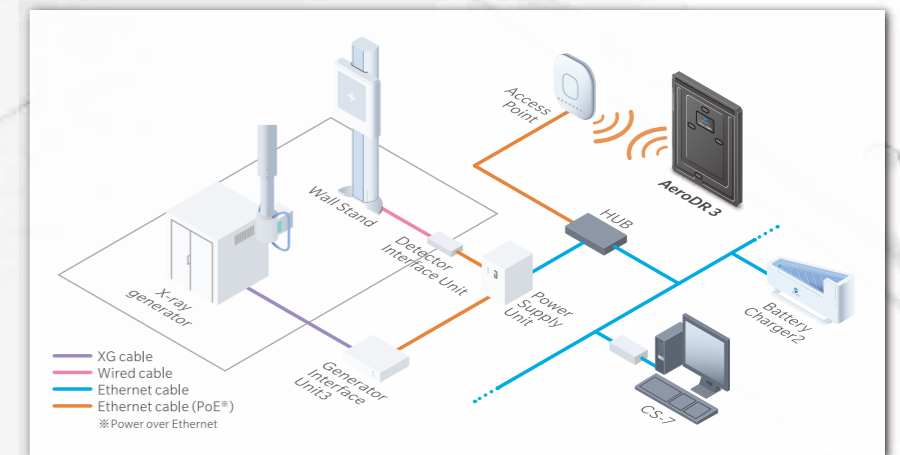


AeroDR SYSTEM 3 Specifications

AeroDR SYSTEM 3 *7

	AeroDR 3 1417HD2	AeroDR 3 1717HD2	AeroDR 3 1012HQ
Product name (model name)*8	AeroDR 3 1417HD2 (P-65)	AeroDR 3 1717HD2 (P-75)	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 (5.7lb)	3.2kg (7.0lb)	1.5kg (3.3lb)
Pixel size	100 / 200 μm	100 / 200 μm	100 / 200 μm
DQE 1mR, RQA5	56% (1cycle/mm) 72% (0cycle/mm)	56% (1cycle/mm) 72% (0cycle/mm)	56% (1cycle/mm) 72% (0cycle/mm)
MTF	62% (1cycle/mm)	62% (1cycle/mm)	62% (1cycle/mm)
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
Antibacterial	An inorganic antibacterial agent kneaded into the exterior material (complied JIS Z 2801/ISO22196 test)	An inorganic antibacterial agent kneaded into the exterior material (complied JIS Z 2801/ISO22196 test)	N/A
Auto Exposure Detection	Available (AeroSync)	Available (AeroSync)	Available (AeroSync)
Expected product life time	Same as the lifetime of AeroDR 3 1417HD2 main body	Same as the lifetime of AeroDR 3 1717HD2 main body	Same as the lifetime of AeroDR 3 1012HQ main body
Durability	Point load*9 180 kg @ φ 40 mm Face load 400 kg @ effective image area overall MIL-STD Acquisition Water resistance*10 IPX6 including power cell	Point load*9 180 kg @ φ 40 mm Face load 400 kg @ effective image area overall MIL-STD Acquisition Water resistance*10 IPX6 including power cell	Point load*9 180 kg @ φ 40 mm Face load 400 kg @ effective image area overall MIL-STD Acquisition Water resistance*10 IPX6 including power cell
Cycle time*11	100μm Approx. 6s with dedicated wired connection Approx. 7s with wireless LAN connection 200μm Approx. 4s with dedicated wired connection Approx. 4s with wireless LAN connection	100μm Approx. 6s with dedicated wired connection Approx. 7s with wireless LAN connection 200μm Approx. 4s with dedicated wired connection Approx. 4s with wireless LAN connection	100μm Approx. 5s with dedicated wired connection Approx. 5s with wireless LAN connection 200μm Approx. 4s with dedicated wired connection Approx. 4s with wireless LAN connection
Battery performance	Operating time*12 (200μm with wireless LAN connection) Approx. 309 images / 8.6 h	Operating time*12 (200μm with wireless LAN connection) Approx. 276 images / 7.6 h	Operating time*12 (200μm with wireless LAN connection) Approx. 165 images / 4.5 h
	*Assuming that the AeroDR system is connected to an X-ray system, the interval between studies is 5 min, and three images are captured in each study, and assuming 20s for each exposure to position the patient.	*Assuming that the AeroDR system is connected to an X-ray system, the interval between studies is 5 min, and three images are captured in each study, and assuming 20s for each exposure to position the patient.	*Assuming that the AeroDR system is connected to an X-ray system, the interval between studies is 5 min, and three images are captured in each study, and assuming 20s for each exposure to position the patient.
Charging time empty to full	Within 30 min	Within 30 min	Within 20 min
Maximum stand by time*13	Approx. 13 h	Approx. 12 h	Approx. 6 h

*7 AeroDR SYSTEM 3 is the commercial product name of SKR 3000. *8 AeroDR 3 1417HD2 / AeroDR 3 1717HD2 / AeroDR 3 1012HQ is the commercial name of P-65 / P-75 / P-81 of SKR3000. With regard to the tested values listed above, measurement methods follow KonicaMinolta standards. *9 Dead loading does not affect the processed image or panel. Robustness against loading of the AeroDR 3 1417HD2 / AeroDR 3 1717HD2 / AeroDR 3 1012HQ does not provide any guarantees against damage or breakage. 1717HD2 / AeroDR 3 1012HQ does not provide any guarantees of perfect water resistance, nor that it cannot be damaged or broken. *11 Specifications may vary depending on system configuration or environment. The 1717HD2 / AeroDR 3 1012HQ is connected to an X-ray generator. *12 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 AeroDR 3 1717HD2 / AeroDR 3 1012HQ is linked to an X-ray generator and is also connected to a CS-7 image processing workstation. *13 The specifications described above are based on a full battery charge and may vary depending on system configuration and environment.



■ **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** : Konica Minolta has two general solutions to digitize analogue portable X-ray units. One is using Aero Storage function without console for small facilities. Another is using upgrade kit with AeroSync function which can be detect X-ray without cable. The customers can carry the DR system to the Portable X-ray unit easily.

Recommended storage and usage environment conditions	When operating : (Temperature) 10 to 35°C (50 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.



★ Specifications are subject to change without prior notice.

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)	474.2×200×206.7mm (18.7× 7.9× 8.1 inches)
Weight	6kg (13.2 lb)



Power Supply Unit

External dimensions (W×D×H)	185×105×150mm (7.3×4.1×5.9 inches)
Weight	2.0kg (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)	60×130×22mm (2.4×5.1×0.9 inches)
Weight	0.3 kg (0.7lb)
Power requirements	DC 24 V (When dedicated AC adaptor 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 (2.2lb)

AeroDR Generator Interface Unit3

Power requirement	When the AC adaptor is used : Supplied from the dedicated AC adaptor. When the Power Supply Unit is used : Supplied from the Power Supply Unit via the Ethernet cable.
Power Supply when using the dedicated AC adaptor	AC 100V–240V ± 10%, Single phase, 50/60 Hz
Power consumption when using the dedicated AC adaptor	Approx. 72VA (100-240V)
External dimensions (W×D×H)	195×150×43 mm (7.7×5.9×1.7 inches)
Weight	1.0 kg (2.2 lb)
Dedicated AC adapter specifications	Dimensions : 78×50×35 mm (3.0×2.0×1.4 inches) ※ excluding wall mount & cable Weight : 180g (0.4 lb) Input : AC 100V - 240V 0.6A-0.3A, Single phase, 50Hz - 60 Hz Output : DC 5V, 3A Safety : IEC60601-1 Class II

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, DICOM X ray Radiation Dose SR Storage SCU, DICOM Storage Commitment SCU, DICOM Grayscale Softcopy Presentation State Storage SCU, DICOM Verification SCU, DICOM X-Ray Radiofluoroscopic Image Storage SCU
Readable devices	AeroDR detector REGIUS MODEL 170, REGIUS MODEL 190, REGIUS MODEL 210, REGIUS MODEL 110 REGIUS MODEL 110HQ, REGIUS SIGMA, REGIUS SIGMA2

