Canon

ZEXIRA

Dramatic evolution of
full-digital systems

The best selection you can make.

This system represents a dramatic evolution in the potential of full-digital systems with flat panel detectors.
Incorporating a variety of flexible features, the Canon Medical Systems Remote control R/F systems ZEXIRA™ can support highly specialized examinations equivalent to those available with dedicated systems.

Highly advanced image processing technology concept

Canon Medical Systems' unique image processing technologies allow all elements that support high image quality, such as algorithms, system design, and firmware to be integrated at a high level.

ZEXIRA

ZEXIRA : Zenithal X-ray imaging of radiography and fluoroscopy

The flat panel detector (FPD) ensures the best possible image quality.

The features of the FPD, which supports dynamic images, have been further improved.
Even in peripheral parts of the image, distortion is eliminated and the effects of halation are minimized.
ZEXIRA's sharp images approach the quality of the best Remote control R/F systems.

Images that are distortion-free to all corners.

A large-field FPD with a 43 cm x 43 cm field of view is adopted. The field in fluoroscopic and radiographic images extends to all corners. In addition, the detector's flat surface always provides high-quality images that are distortion-free from the center to the edges of the image.

Comparison of field angle and image quality in images from the same patient

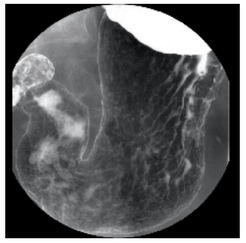


Image acquired with I.I. system

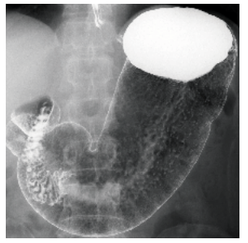
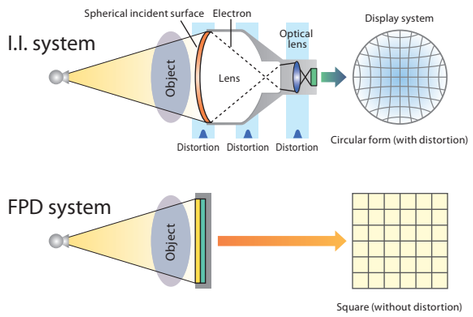


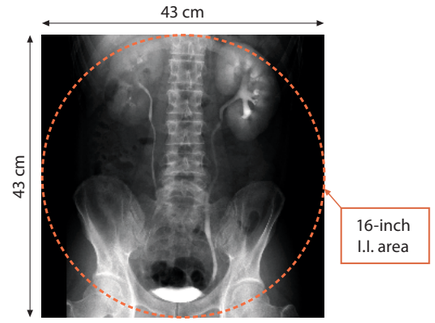
Image acquired with FPD system

Comparison of field and distortion in I.I. and FPD system



Large, square field of view.

Compared to a 16-inch I.I, the square-field FPD allows observation over a large field of view. In particular, it provides excellent performance for studies in which the region of interest is square, such as barium enemas.



Recording and displaying fluoroscopic images in association with acquired images.

Fluoroscopic images can be recorded in association with acquired images. The recorded fluoroscopic images can be played back immediately if necessary, delivering new potential in fluoroscopic diagnosis.

Compact unit allows flexible operation. Examinations efficiently supported from a variety of viewing angles.

The compact design, wide clearance, and dynamic table movement of the system allow wider clinical application than ever before. Flexibly supports gastrointestinal tract studies and a range of other examinations.

Tilt angle from +89° (standing position) to -89° (head-down position).

A wide tilt angle range from +89° to -89° is available. In addition to routine studies of the gastrointestinal tract, various other studies can be performed, depending on the room layout.

Safety tilt mode prevents elderly patients from falling.

During positioning, "Safety tilt mode", the first function of its type in the industry, automatically stops the table temporarily at a preset angle before moving to the 89° position, to prevent elderly patients from falling from the table.

* The temporary stop angle is set at the time of installation upon request from the customer.

Table can be lowered to 48 cm* above the floor for patient-friendly operation.

The table can be lowered to just 48 cm* above the floor. This provides easy transfer for elderly patients, children, and patients in wheelchairs when the table is set horizontally.

Wide 133 cm coverage allows whole-body examinations.

The X-ray beam center can be moved approximately 133 cm, making it possible to increase the examination range. Without moving the tabletop in the longitudinal direction, it is possible to perform studies of the gastrointestinal tract, urinary system, and blood vessel system, as well as endoscopic examinations.

Oblique angle from +35° to -30° improves the flexibility of the irradiation field setting.

The X-ray tube angle can be set from +35° to -30°. The X-ray beam direction can be set as desired, facilitating cascade stomach examinations and preventing overlap in radiography of the intestinal tract.

Oblique, tilt, and spot operation can be performed simultaneously.

Oblique movement, tilting, and imaging system longitudinal movement can be performed simultaneously and stress-free operation can be performed.
For example, a contrast-enhanced study of the upper part of the gastrointestinal tract, in which the angle of the stomach is observed with angled radiography while controlling the flow of barium by tilting the table, can be performed at the optimum timing.

Supports angiography(option).

An optional angiography package can be used in combination, providing excellent support for abdominal angiography, extremities, etc. Using an additional reference image monitor allows monitoring to accurately support Intervention procedures.

Allows examination positions equivalent to a dedicated table for urological examinations.

It is possible to set the edge of the imaging field to as little as 13 cm from the foot end of the table.
A sensor* for detecting contact between the operator's knees and the table can be mounted.
If there is interference, table vertical movement or tilting is stopped automatically.

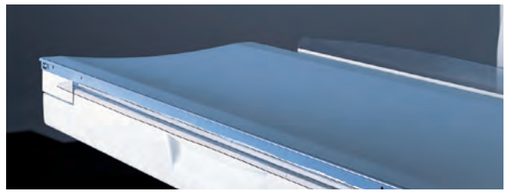
*Sensor and knee pads are provided together.

Flexibly supporting examination of the lower extremities.

With ZEXIRA, the edge of the imaging field can be set to as little as 13 cm from the foot end of the table (shortest in the industry) when the table is set in the standing position. Various studies of the lower extremities can be performed, such as imaging of leg veins under the gravity load, and imaging in the orthopedic field for the region below the knees.

Contoured, ergonomically designed tabletop.

Advanced design provides a contoured tabletop with gentle concavity, minimizing patient discomfort during examinations. The patient can change position easily during examination of the upper part of the gastrointestinal tract, and can lie comfortably on the tabletop, even for long examinations such as ERCP.



The table can be installed in contact with the wall, ensuring clearance around the unit.

The table can be installed in contact with the wall, ensuring sufficient clearance in front of the table. The support column for tabletop vertical movement is slim, and mechanical sections such as rails are built-in, permitting easy access from the back of the table. It has excellent support for ERCP, nephrostomy, and gynecological examinations.

The depth of the system is reduced, providing more working space.

The depth of the ZEXIRA system is reduced to 174 cm. Compared to conventional X-ray TV systems, by installing the system in contact with a wall, a larger working space can be ensured. Examination or intervention can be performed using an endoscope system or ultrasound system in the same room.

Carefully considered design contributes to highly reliable examinations.

Comfortable table mat.

Patient-friendly materials are used for the table mat, reducing patient discomfort during long examinations.

New shoulder rests improve contact with the patient's body.

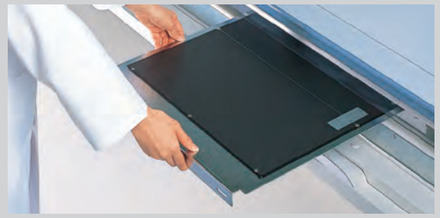
The shape of the shoulder rests has been improved to best fit the shoulder size of the patient.
Patient-holding capability has been improved and firmness optimized, allowing comfortable, reliable examinations.

Adjustable compression force.

Compression force can be increased up to 80 N. Within the movement range of the compression cone arm, it is possible to slide and stop the arm at the desired position (option).

Detachable grid.

The detachable grid can be removed for some procedures; for example, radiography of the extremities or pediatric radiography. This makes it possible to perform radiography under the optimum X-ray conditions, lowering the patient exposure dose.



Newly designed remote control panel. Accurately supports smooth examination flow.

New remote control panel is employed as a common unit for X-ray control and table control. As the remote control panel is separate from the desk, it can be positioned according to the layout of the monitor, keyboard, and other units.

Control panel focuses on usability.

The X-ray control and table control panels are integrated into a single control panel. Visibility and operability are further improved. The ergonomic design places frequently used switches adjacent to each other, allowing natural operation.

A handswitch is employed
A handswitch is employed, making it possible to intuitively perform X-ray control.

Multifunctional dial
A multifunctional dial is used for volume adjustment. Use of the different illumination colors makes it possible to quickly adjust fluoroscopy/radiography conditions.

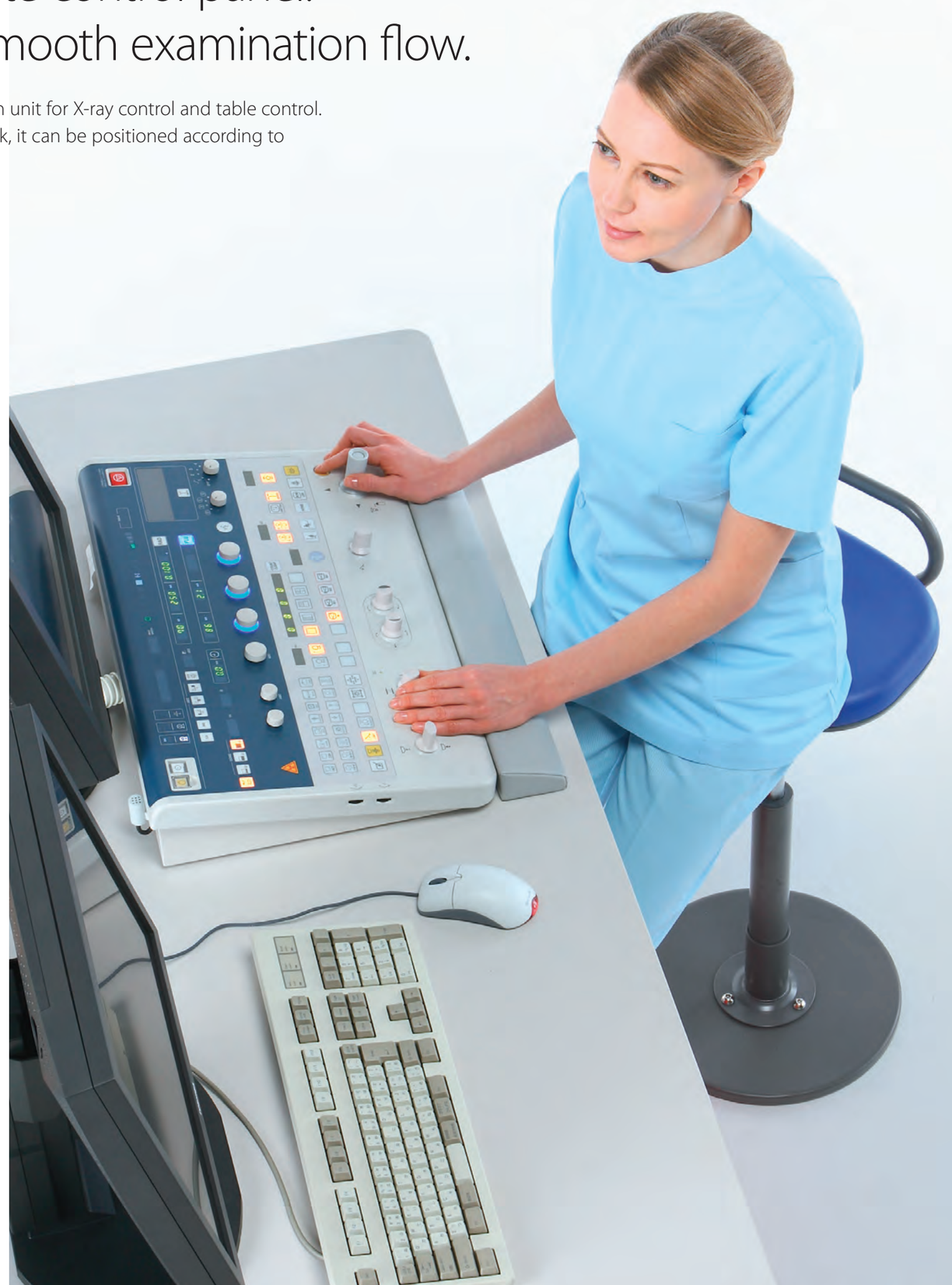
High-resolution LCD
A high-resolution LCD monitor with improved visibility is used.

Joystick for table operation
Table operation can be performed comfortably regardless of whether the operator is standing or seated.

ABC* function provides stable pulsed fluoroscopic images.

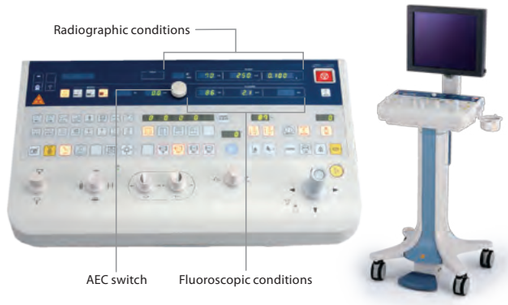
An automatic brightness control circuit (ABC function) automatically sets the appropriate fluoroscopic conditions, such as tube voltage and tube current. Fluoroscopic images with stable brightness can be acquired.

* Auto Brightness Control



<Local control console> (option) Local control console displays X-ray conditions.

The X-ray conditions can be displayed on the local control console. Fluoroscopic conditions can be checked to control exposure appropriately.



<APC panel> (option)

An LCD touch panel displaying the X-ray conditions for cassette radiography can be used in combination. It can be placed on a desk or wall-mounted.

Main screen

Simple operation reliably provides high-quality images.

Image quality adjustment, until now necessary for each radiographic exposure, has been fully automated. Blackout, unavoidable in film radiography, has also been eliminated.

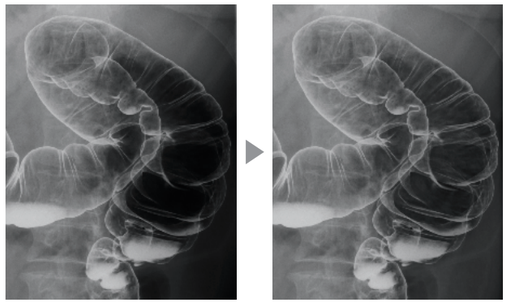
Advanced digital compensation filter (DCF)* eliminates blackout.

In the film/screen system or in conventional image processing, image correction cannot be performed properly in areas in which intestinal tracts with gas are overlapped and partial blackout occurs for areas in which the body cavity thickness differs. The advanced digital compensation filter corrects the density differences in single images and improves the image quality. In examinations such as gastrointestinal angiography and orthopedic radiography, optimal images can always be acquired.

* Digital Compensation Filter

Regions in which the DCF works effectively

Barium enema	Region in which intestinal tracts are overlapped or intestinal gas is pooled
Barium swallow	Regions with significant differences in barium contrasting density and double contrast radiography for the fundus of the stomach
General skeletal radiography	Regions with excessive blackness due to low body thickness and skin folds



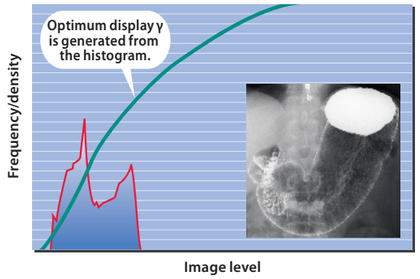
Before image processing with the DCF

After image processing with the DCF

Troublesome image quality adjustment is automated in Auto window function.

In actual practice, exposure doses and image levels are changed for each study according to the patient's physique, the region to be examined, and effects from direct X-rays. It is therefore necessary to correct images according to changes in the window or histogram by using the optimal gamma curve. ZEXIRA's unique Auto window function can generate the optimal gamma curve for the histogram distribution in the acquired image. The acquired images are always optimized.

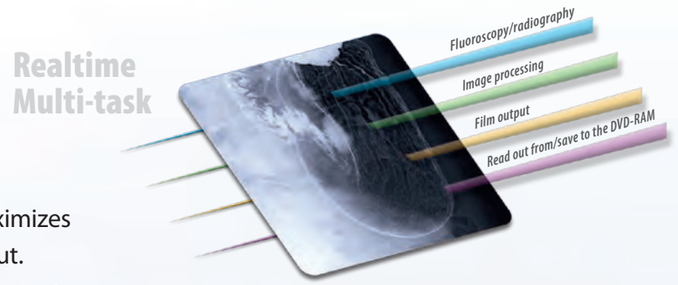
Example:
Double contrast radiography with Bucky table



New SNRF* noise reduction filter (option).

SNRF, a new noise reduction filter effective for reducing almost all noise to a specific level regardless of the frame rate, is available. The original image is classified into edges, flat parts, and bumps for analysis, and the filter coefficient is determined so that sections with the same image structure can be smoothed. Elements that affect images, such as blurring, after-image, and reduced contrast are eliminated, making it possible to improve S/N ratio to approximately four times that of our conventional systems.

* Super Noise Reduction Filter



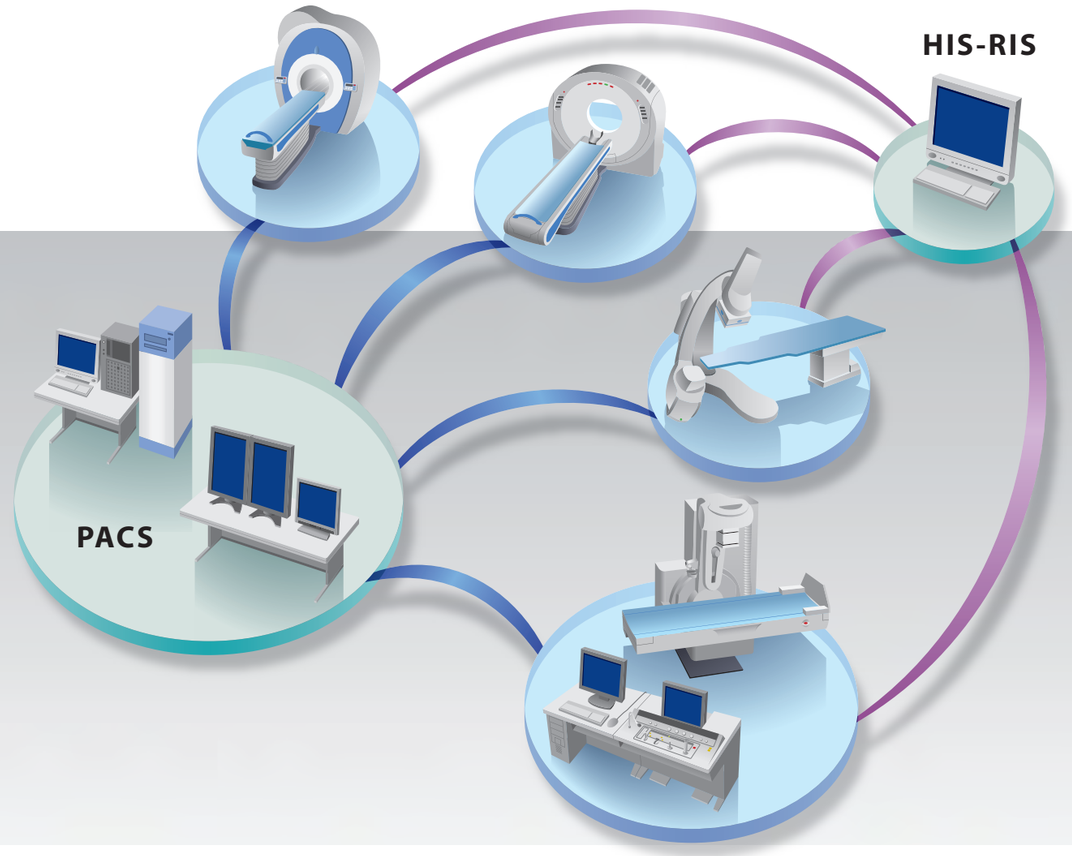
Parallel processing maximizes examination throughput.

Simultaneous parallel processing can be performed during fluoroscopy/radiography, including patient registration, image processing, film output, etc.

* Images on monitors are simulated.

Network transfer and digital storage.
Efficient workflow supports quick diagnosis.

Acquired images are quickly transferred to the intra-hospital network for immediate diagnosis.
Increased information expansion capability by digitization completely changes
the post-examination process flow.



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Acquired images can be output in DICOM format*.

DICOM PRINT DICOM Storage	Images can be transferred to the dry/wet imager and image server in DICOM format.
Option DICOM Media Storage	Images can be written to a CD-R or DVD-R in DICOM DIR format.

* Depending on the equipment type or version, usage restrictions may apply. This should be confirmed in advance with the manufacturer of the equipment to be connected.

Patient information can be acquired.

Option Supporting the intra-hospital network	Patient information can be acquired in the DICOM format from the terminal, which is connected to the intra-hospital network (HIS, RIS).
Option Online connection	Medical terminals that do not support DICOM are network-linked, enabling online information exchange.

Supporting the intra-hospital network (option).

Image transfer (Storage SCU), printing (Print SCU), patient information reception (MWM SCU), and study results response (MPPS SCU) can be performed in conformity with the worldwide medical image communication standard DICOM 3.0.

Highly reliable Mirroring HDD backup function is enabled by double-redundant HDD.

Acquired images are stored on the hard disk. The hard disk has a double-redundant (mirroring) structure in case of hard disk malfunction. Acquired images are stored on both disks at the same time, avoiding data loss if a malfunction occurs.

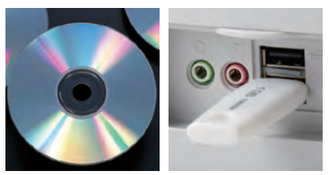
Up to 70,000 images* can be stored.

The main unit is equipped with a high-capacity hard disk. Up to 70,000 images can be stored. This makes it possible to easily perform examinations such as DSA (option) in which a large number of images are acquired.

* For 1024 x 1024 matrices

Writing/using image data to/from various types of media is possible.

The image processing system permits acquired image data to be written on various media types*. For example, image data is written in BMP format and saved to the PC via USB. The saved image data can then be processed to create slides and used in presentations on clinical cases. In addition, image data can be written using DICOM standards**, which are storage standards for clinical images.



* DVD-R, CD-R, etc. **Option

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Canon Medical Systems Corporation meets internationally recognized standards for Quality Management System ISO 9001, ISO 13485.
Canon Medical Systems Corporation meets the Environmental Management System standard ISO 14001.

Disclaimer: Some features presented in this brochure may not be commercially available on all systems shown or may require the purchase of additional options. Please contact your local Canon Medical Systems representative for details.

Made For life