**FUJIFILM**
Value from Innovation

# SCENARIA View

Delivers a superb view.
See for yourself.

SCENARIA View

# Intelli IPV
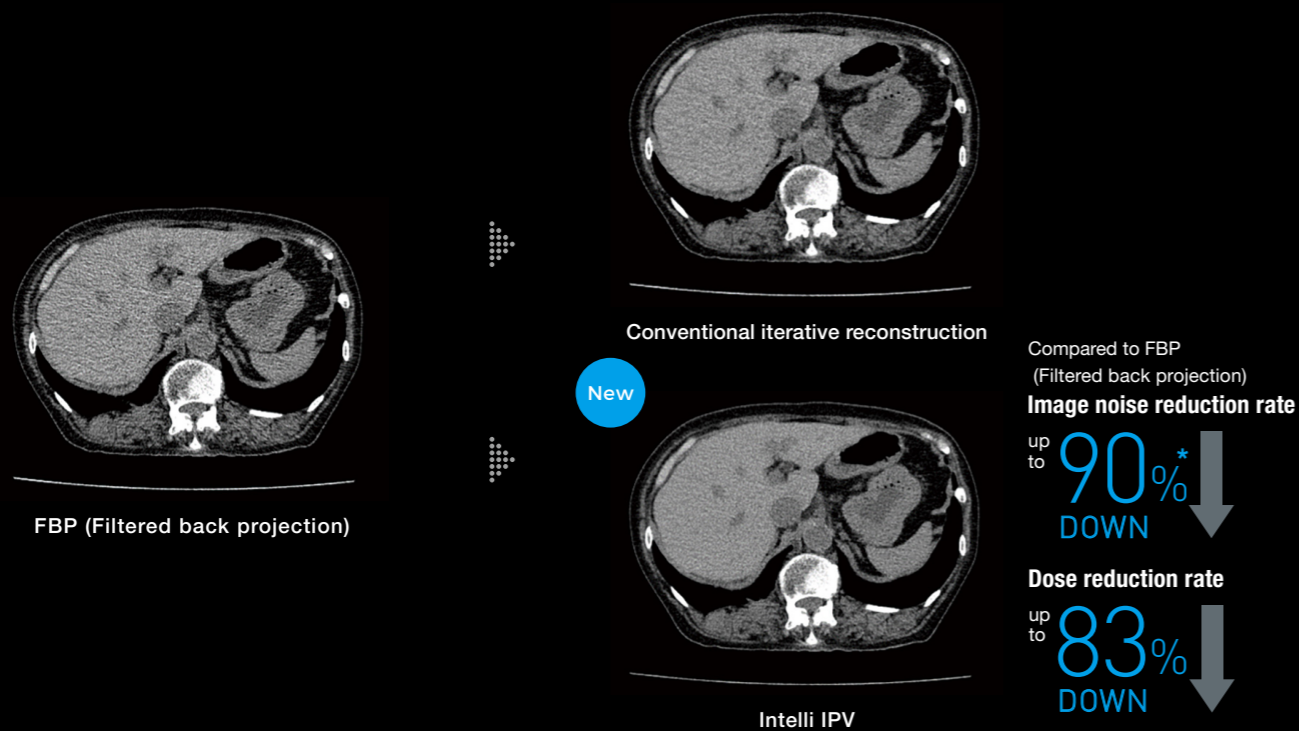
**Low Dose, High Quality Image**
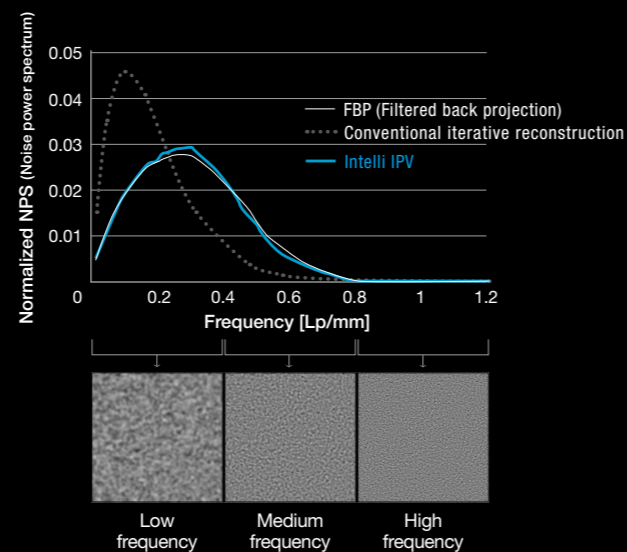
# SynergyDrive

**Optimized Workflow**

# Intelli IPV

Our iterative reconstruction method, Intelli IPV*, provides images which maintain their natural texture even at high noise reduction rates and their excellent visibility even at low doses, and does not require a dedicated operation room or additional hardware. Furthermore, by applying a low dose, the anode heat capacity is equivalent to 45 MHU (converted value).

*IPV stands for Iterative Progressive reconstruction with Visual modeling.

## Achieving natural visibility with dose reduction

FBP (Filtered back projection)

Conventional iterative reconstruction

**New**

Intelli IPV

Compared to FBP (Filtered back projection)

**Image noise reduction rate**

up to **90**%* **DOWN**
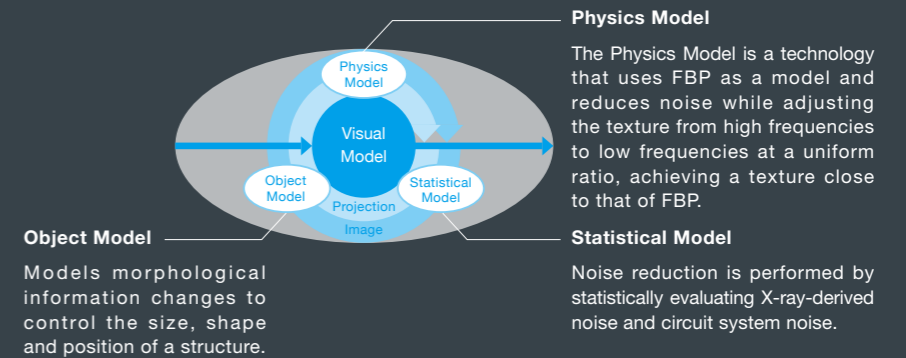
**Dose reduction rate**

up to **83**% **DOWN**

While adjusting the texture at a uniform ratio from high frequency to low frequency, the physical properties that affect visibility are made as close as possible to FBP.

Normalized NPS (Noise power spectrum)

— FBP (Filtered back projection)
····· Conventional iterative reconstruction
— Intelli IPV

Frequency [Lp/mm]

Low frequency | Medium frequency | High frequency

## Visual Model

The Visual Model is a technology that controls image noise and image quality by iterative processing based on statistical model, object model, and physics model.

**Physics Model**
Physics Model
Visual Model
Object Model
Projection
Image
Statistical Model

**Physics Model**

The Physics Model is a technology that uses FBP as a model and reduces noise while adjusting the texture from high frequencies to low frequencies at a uniform ratio, achieving a texture close to that of FBP.

**Object Model**

Models morphological information changes to control the size, shape and position of a structure.

**Statistical Model**

Noise reduction is performed by statistically evaluating X-ray-derived noise and circuit system noise.
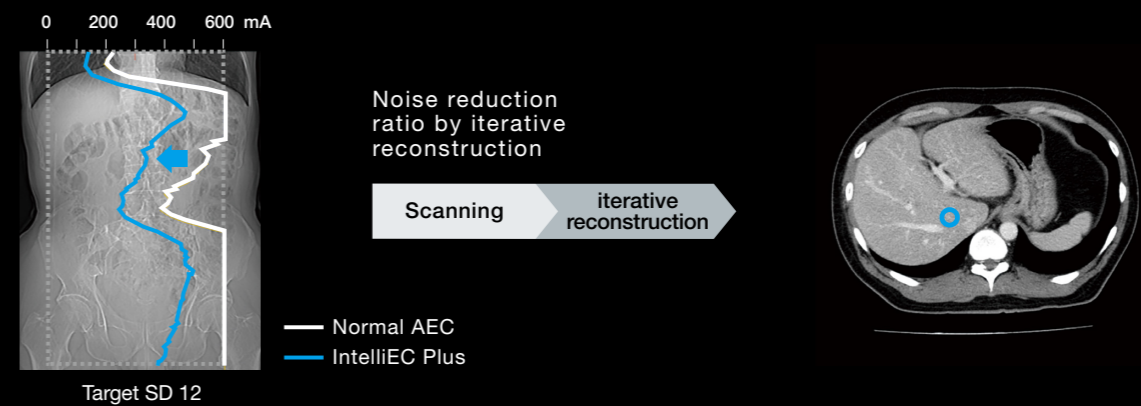
## Improvement of Low-contrast Detectability

Intelli IPV significantly reduces noise and improves low-contrast detectability while maintaining image texture quality especially in the head region where low-contrast detectability is important.

FBP | Conventional iterative reconstruction | **New** Intelli IPV

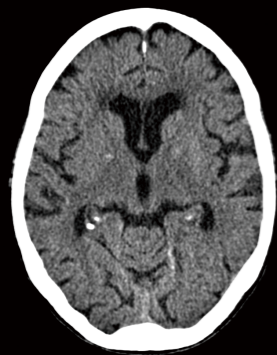**Low-contrast detectability compared with FBP**

up to **200**%
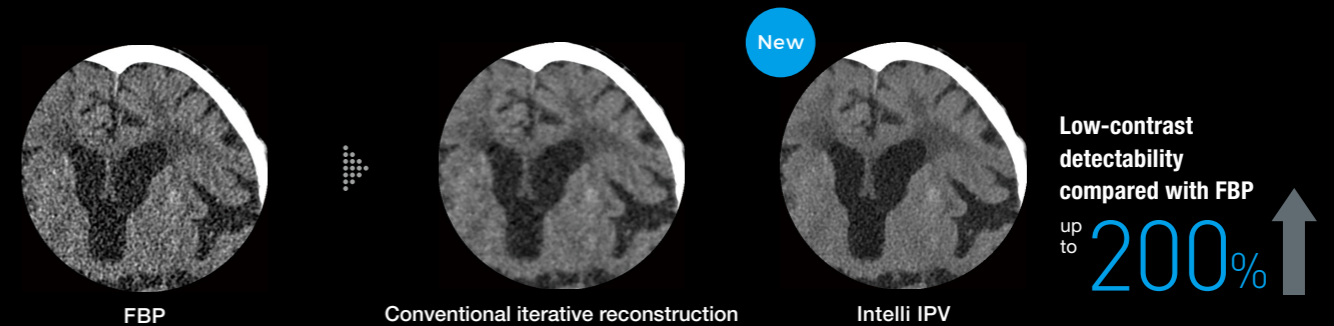
## IntelliEC Plus (combination of auto exposure control and iterative reconstruction)

The tube current is continuously modulated in 3D direction to obtain an image that achieves the target SD. When modulating the tube current, it is possible to set scanning conditions that optimize not only conventional iterative processing but also Intelli IPV characteristics.
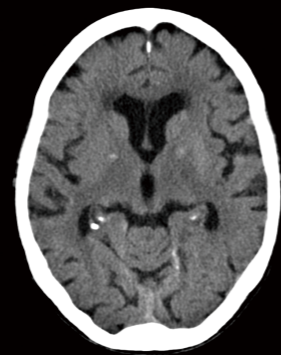
0   200   400   600  mA

Noise reduction ratio by iterative reconstruction

Scanning ▸ iterative reconstruction

— Normal AEC
— IntelliEC Plus

Target SD 12

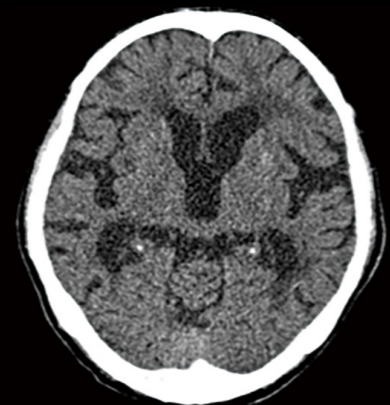*Images and processing performed by SCENARIA CT system.

*Scanning the lung field

# Image Gallery



FBP

Intelli IPV

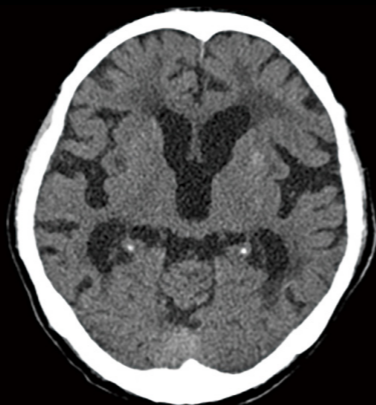

FBP

Intelli IPV

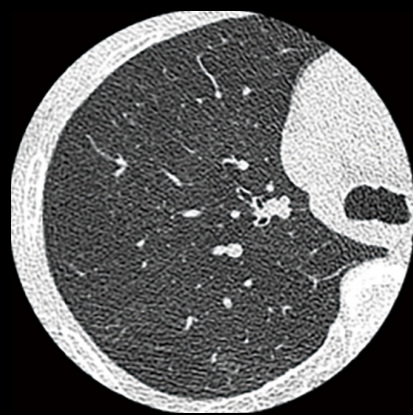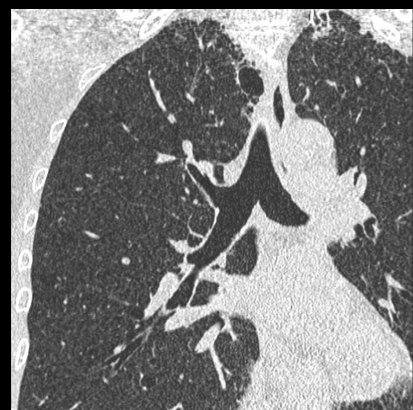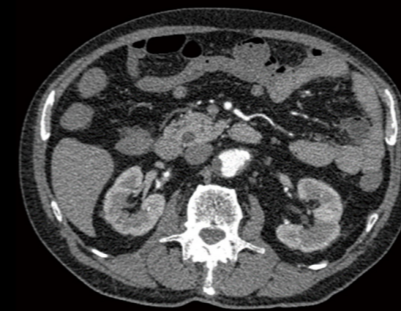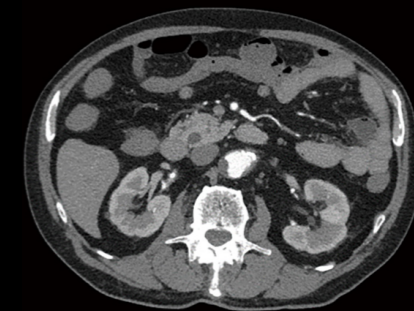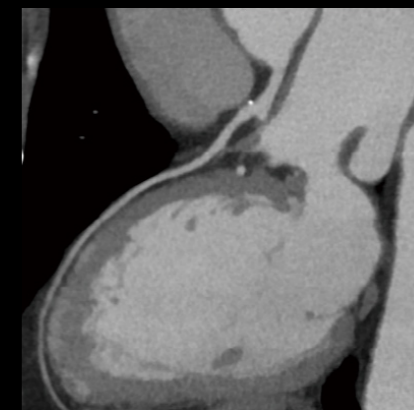Tube Voltage : 100kV
Iodine concentration :
304.6mg/kg



FBP

Intelli IPV
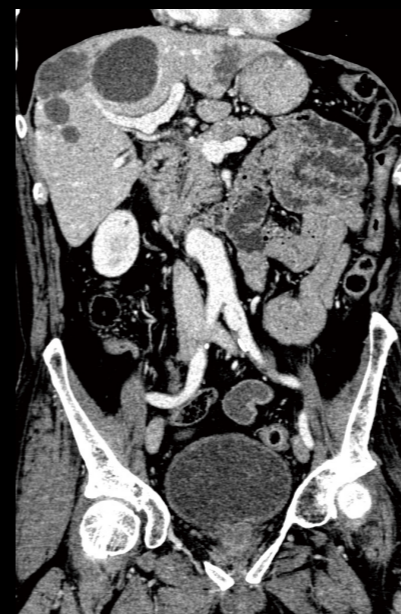


FBP

Intelli IPV



FBP
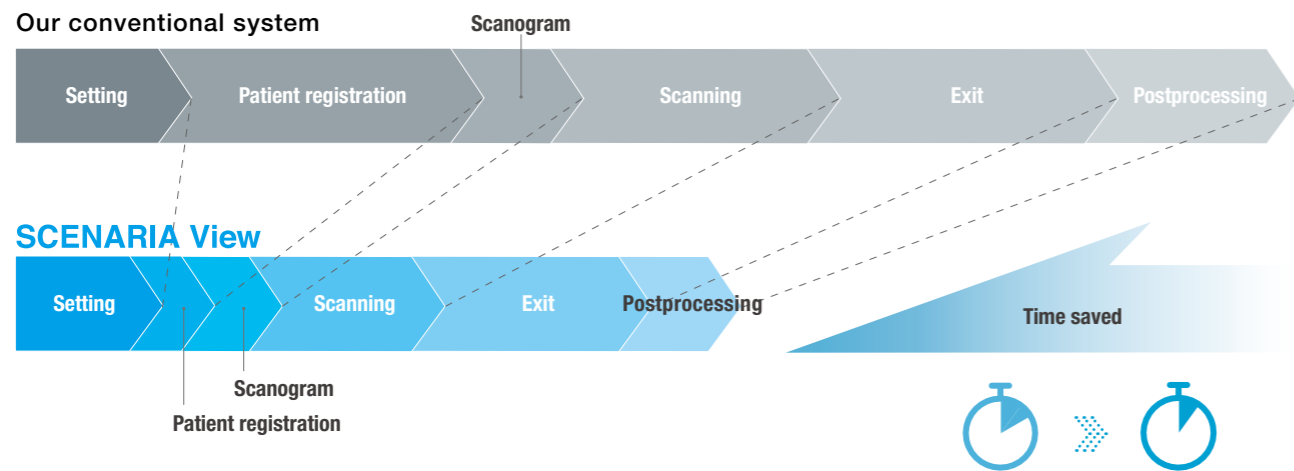
Intelli IPV



FBP

Intelli IPV



FBP

Intelli IPV

SCENARIA View

# SynergyDrive

Examination time is greatly reduced by optimizing the workflow during scanning.

The operator's workflow has been improved by shortening time-consuming procedures.

**Our conventional system**

Setting → Patient registration → Scanning → Exit → Postprocessing

Scanogram

**SCENARIA View**

Setting → Scanning → Exit → Postprocessing

Time saved

Scanogram

Patient registration

## Simultaneous presetting and image processing for multiple patients

The operator is required to perform various tasks in scanning and image processing.
"Study Tab" allows you to switch worksheets for up to 3 patients simultaneously, like flipping pages.
"Navigation Tab" allows you to freely move from scanning to image processing within the same worksheet. Tab switching contributes to a stress-free operator environment.
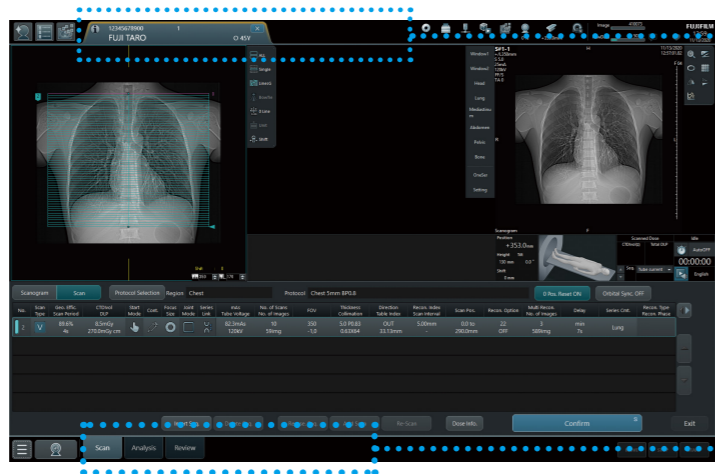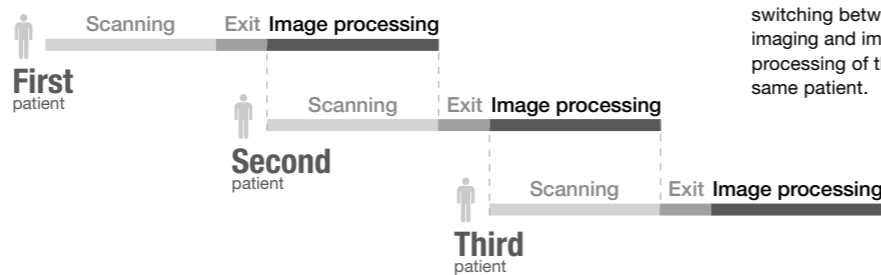
**Study Tab**

"Study Tab" allows easy switching through each patient worksheet.

**Navigation Tab**

"Navigation Tab" allows easy switching between imaging and image processing of the same patient.

First patient — Scanning | Exit | Image processing

Second patient — Scanning | Exit | Image processing

Third patient — Scanning | Exit | Image processing

Presetting and image processing for multiple patients are possible at the same time.

## Lateral slide table function for easy positioning

Since the patient table moves laterally up to 200mm (+/-100mm), off-set regions such as the heart and shoulders can be easily positioned at the center of the FOV, improving examination efficiency.

50~60mm

100mm
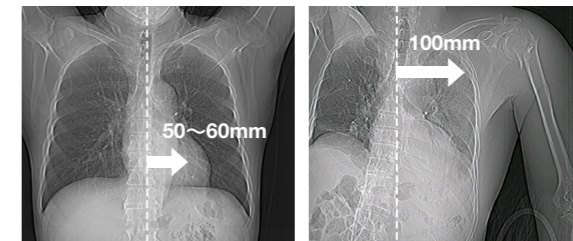
Positioning of the heart around the center of the FOV

Positioning of the extremities around the center of the FOV

*Images and processing performed by SCENARIA CT system.

Max. 200mm

Width 475mm
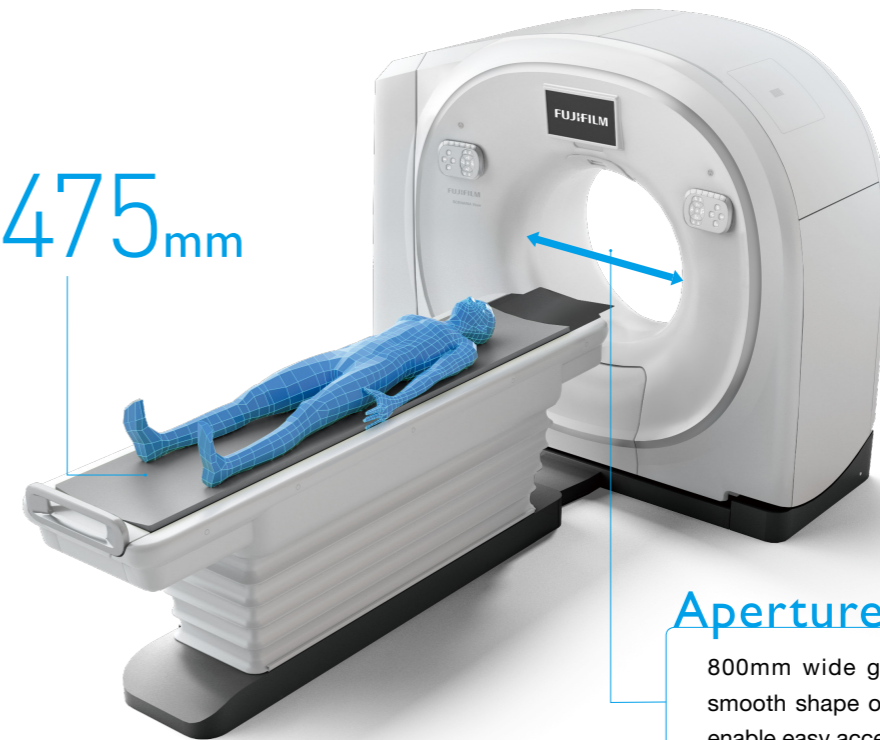
Aperture 800mm

800mm wide gantry aperture and smooth shape of the gantry opening enable easy access to the patient.

Improved reproducibility and reduced set up time.

## AutoPose (Automatic scan range setting)

SCENARIA View can automatically set the scanning range using the scanogram image. The operator can adjust the range manually, if necessary. AutoPose supports several reference lines setting, such as OM Line (Orbitomeatal base line), SM Line (Superior orbitomeatal line) and RB Line (Reid's base line), for head scanning. Additionally, since the limits can be set in advance, the scan range can be customized according to the preference of the facility.

Red：Automatically positioned area，Blue：Automatically positioned area + Margin setting area

OM Line

SM Line

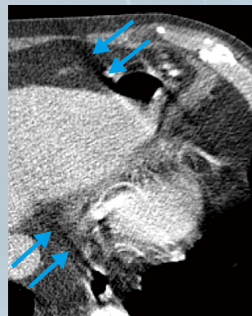RB Line

**Head**

**Chest**
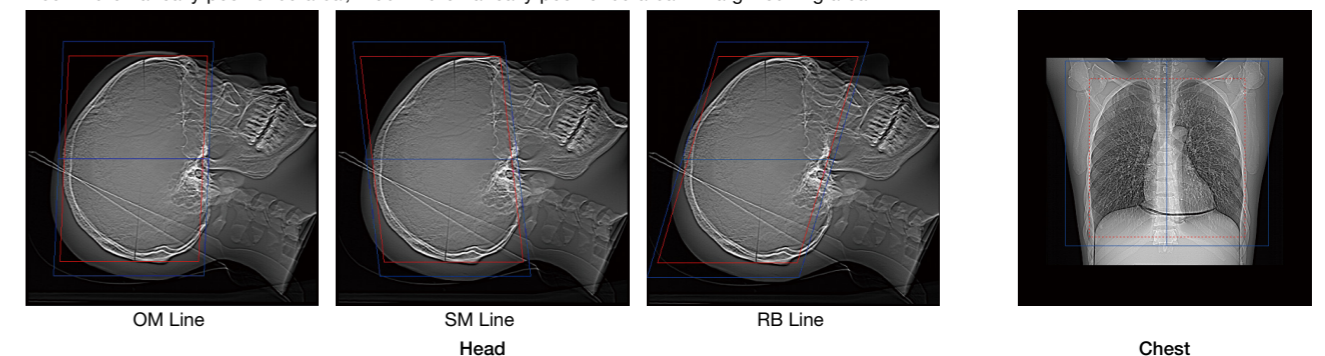
# High Speed & Quality

Outstanding technologies to achieve both high-speed scanning and high-quality images.

## CORE Plus

New image reconstruction method which incorporates our unique cone beam reconstruction algorithm. This method reduces streak and motion artifacts during high pitch mode scan.
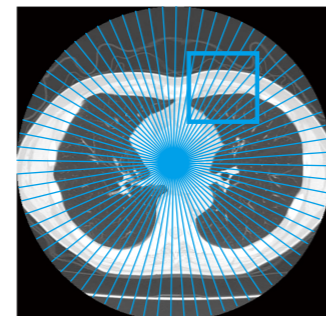
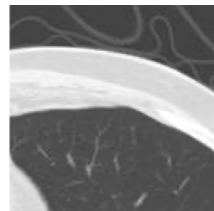Feldkamp method (conventional image reconstruction algorithm)
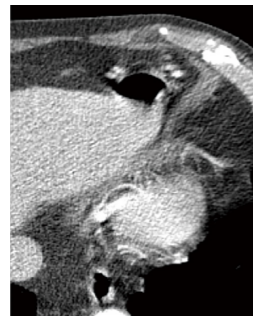
CORE method (our unique 3D image reconstruction algorithm)
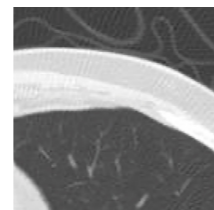
## High-speed Data Sampling

High-speed data sampling at 2,880view/s provides high-definition images even in peripheral regions. It is possible to scan at 0.35s/rot for the whole body.

2,880 view/s

1,008 view @0.35s

630 view @0.35s

## Fully Digital HV Detector

The HV Detector system and optical systems are both newly designed. The new detector contributes to the production of high quality images by reducing electrical noise, power consumption, and weight reduction.

### 1.Noise reduction

MaxiLight technology makes it possible to eliminate the need for analog wiring between boards making the HV Detector fully digital. The new Fully Digital HV Detector reduces electrical noise by up to 40% compared to a conventional detector*.

A/D converter module

Axial direction

Scintillator array

Photodiode array

Circuit board

### 2.Reduced power consumption

The new HV Detector reduces power consumption by 45% compared to a conventional detector* as the HV Detector has no analog wiring between circuit boards. It further reduces power consumption by the "Off-time mode" function that cuts off the power while maintaining the performance of the X-ray detector.
As a result, the new detector reduces the total power consumption by up to 78%.

Power consumption during normal use

Power saving
(Reduction of power consumption in X-ray detection circuit)
up to 45%

Off-time mode

up to
78%
DOWN

SCENARIA     SCENARIA View

Nighttime power consumption
(power consumed even when the device power is turned off)

### 3.Improvement in reliability and weight reduction

The new detector has improved system reliability compared to a conventional detector* by eliminating analog wiring between circuit boards. Its weight has also been reduced by 30%.
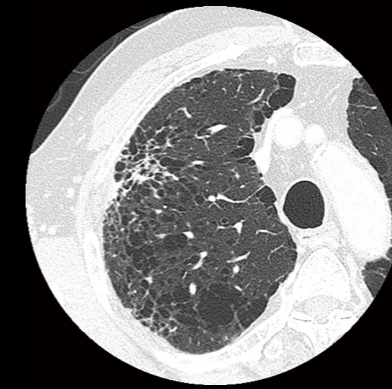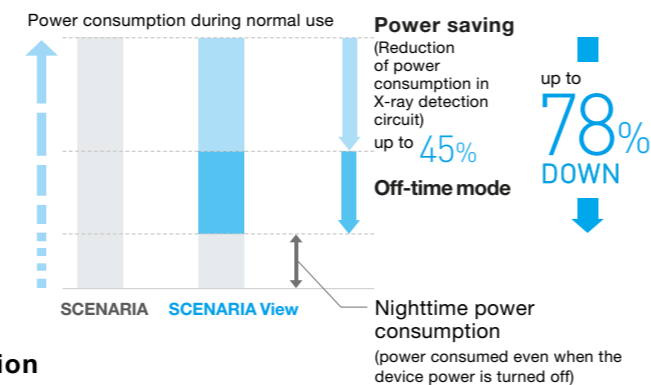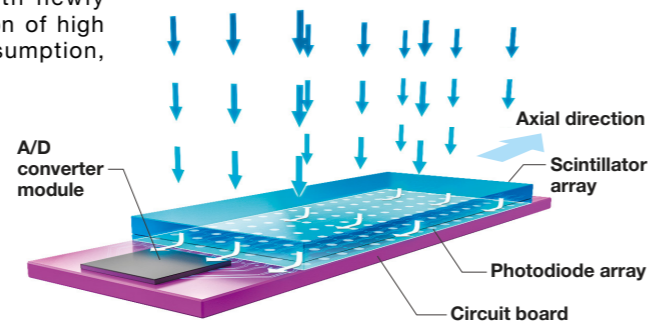
Lung Cancer
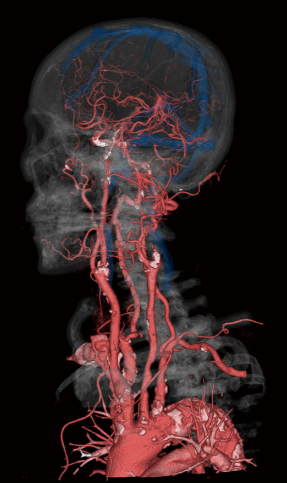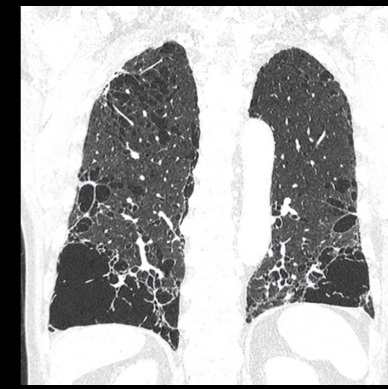
Left Intra Carotid Artery Stenosis
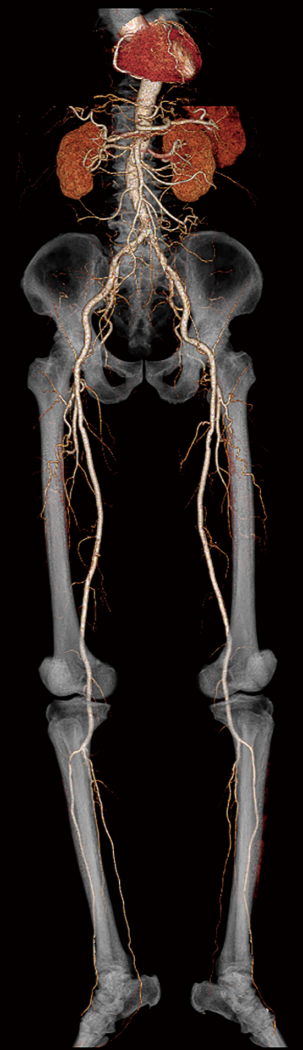
Pediatric CTA (10 months)

Rib Fatigue Fracture

Abdominal Aortic Aneurysm
(100kV, Iodine concentration : 304.6mg/kg)
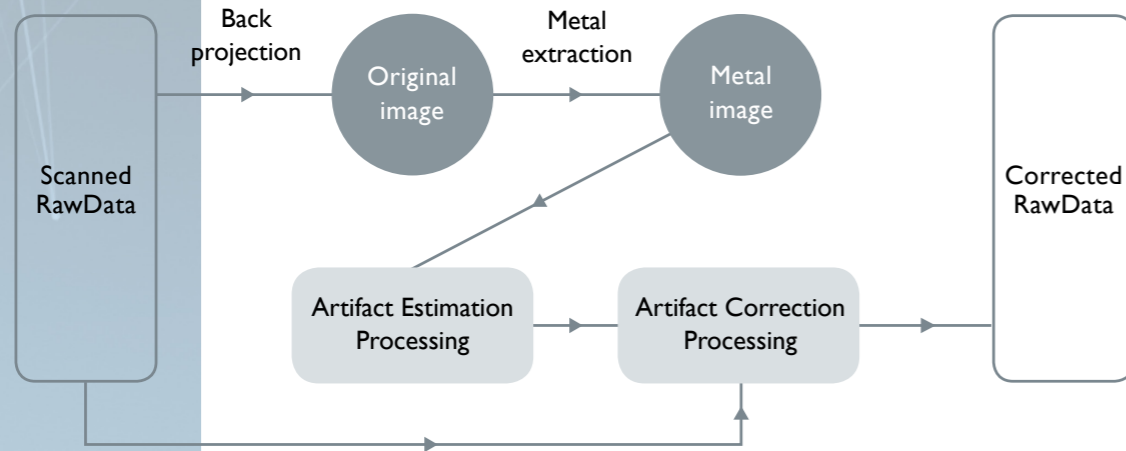
Aortic Dissection Stanford type-A

Combination Scan
(ECG + non-ECG)

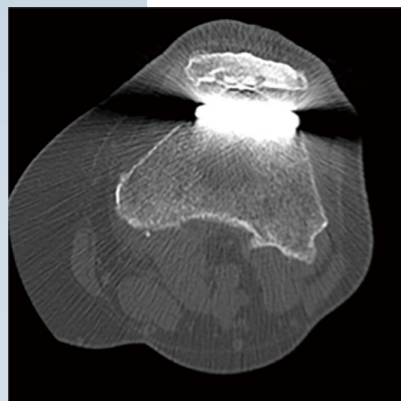SCENARIA View

# Advanced Function

## HiMAR Plus

It reduces metal artifacts by applying iterative calculations. The reduction in intensity can be selected according to the ROI and the clinical indications of the examination.

Scanned RawData — Back projection → Original image — Metal extraction → Metal image → Artifact Estimation Processing → Artifact Correction Processing → Corrected RawData
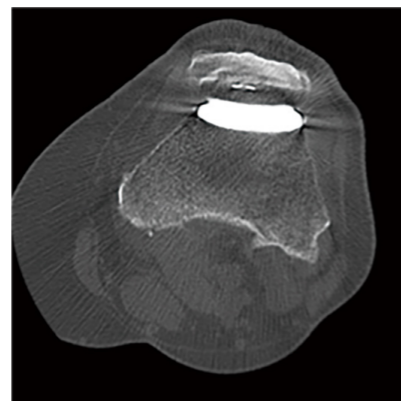
FBP

HiMAR Plus

FBP

HiMAR Plus

## CardioConductor

CardioConductor is the function which tracks heart rate range during the patient's breathholding practice and automatically calculates imaging and image reconstruction parameters based on the cardiac data collected*. For imaging parameters, it is possible to chose from "Auto", which focusses on ease of use, or "Manual", which allows free customization.
*The operator may need to perform checks, settings, and adjustments.
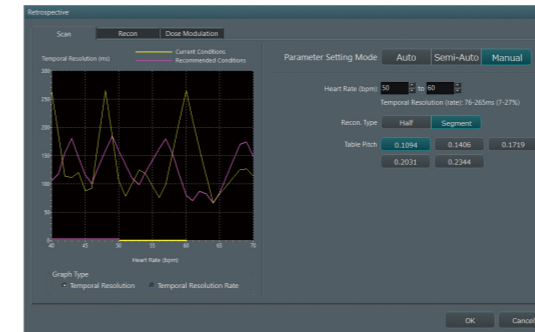
## CardioHarmony

After image acquisition, CardioHarmony automatically* selects the phase of the cardiac cycle possessing the minimal amount of cardiac movement as the optimal cardiac phase. Search times for the optimal cardiac phases, which is a bottleneck in the workflow of cardiac CT, can, therefore, be significantly shortened.
*The automatic selection must be checked and may be adjusted, if necessary, by the operator.

VR

RCA          LAD

Amount of movement

Optimal cardiac phase (Systole)    Optimal cardiac phase (Diastole)    Cardiac phase (%)
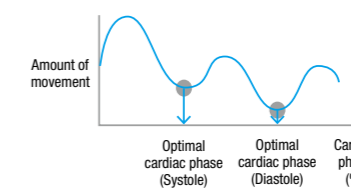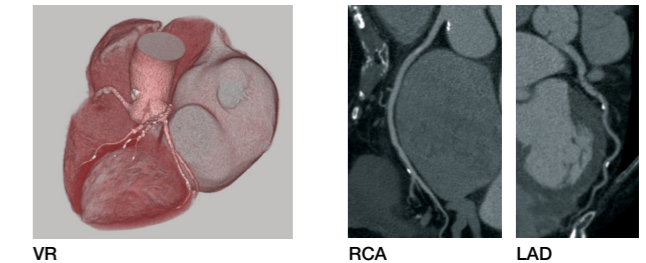
In this case the heart rate changed from 37 to 72 bpm during scanning, which makes it difficult to find the stationary phase. The optimal cardiac phase can be found easily by using CardioHarmony.

*Images and processing are performed on the SCENARIA CT system.

## IntelliEC Cardiac

The tube current modulation can be set for up to 2 phases and, in doing so, it is possible to reduce the dose in cardiac CT examinations.

(mA)

250

50

75          (%)
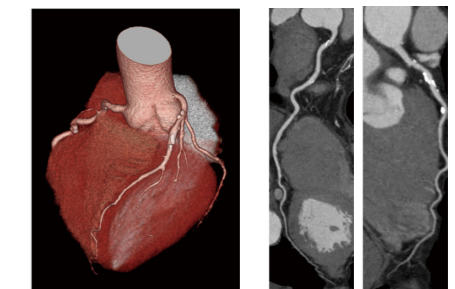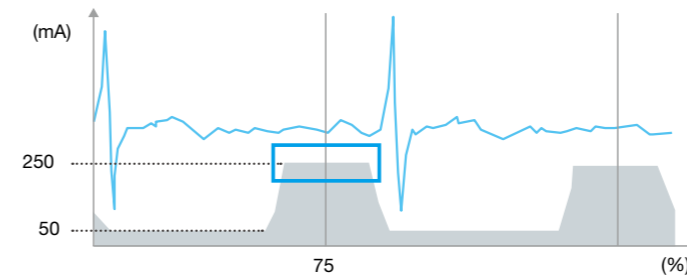
Reconstruction cardiac phase 75%

RCA          LAD

120kV, 0.35s/rot, Pitch 0.17, Intelli IP Lv3

*Images and processing are performed on the SCENARIA CT system.

## IntelliCenter

Since the patient table moves up to 200mm laterally, it is possible for the operator to position the ROI (Region Of Interest) close to the center of the scan field without touching the patient. If the region of interest is offset from center of the scan field, then a post recon is required to align to the reconstruction center. However, by using IntelliCenter, that process can be skipped[1] and, as a result, is expected to shorten examination time[2]. In general, it is expected to improve the spatial resolution of the image by setting the scan area at the center of rotation. The integration of table lateral movement and tilt scanning also allows more flexibility in head examination. CTDIVol is reduced by a minimum of 8.0%[3] when the head is shifted near the center of rotation and the dose compensation filter is switched from standard to small.

Center

Off-Center (50mm)

0.42
0.38
0.36
0.33
0.45
0.42
0.38
0.36

Max. 200mm
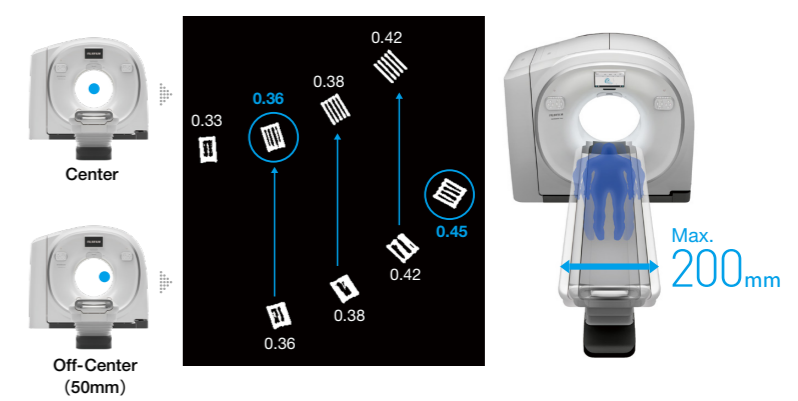
[1] Limited to cases where the scan area can be positioned at the center of the FOV by lateral movement.
[2] The time starting from the patient lying on the table and to the end of the scan.
[3] Scan parameters: Tube voltage 120kV, Tube current 300mA, Scanning time 1.0 s, 0.625mm×32rows

# Other Functions

## 1 Touch Vision provides a comfortable examination for both patient and operator

The large monitor at the front of the gantry ensures smooth scan guidance to the patient. 11 languages are installed to guide breath hold during the scan.
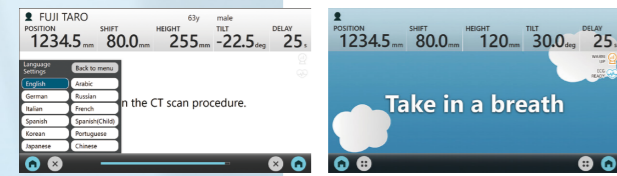
Operation buttons are located on both sides of the monitor to enable easy access for the operator.

## 2 Breath Guide helps the patient with visual guidance during the scan

Breath Guide displays are mounted at three locations on the gantry to indicate breath hold timings to the patient during the scan. These can be seen from any patient position. The guidance is displayed by 11 languages selectable with auto-voice.

Breath Guide
(11 languages selectable)

Breath Guide
(for children)
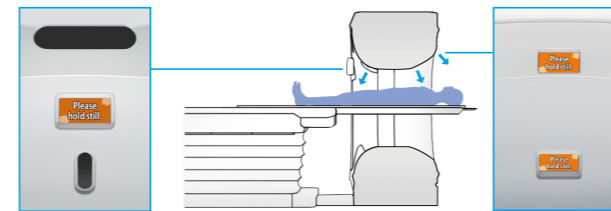
## Other options

- Dual Energy Scan
- Shuttle Scan
- Calcium Scoring
- guideShot
- riskPointer (LAA Analysis)
- fatPointer (Body fat analysis)
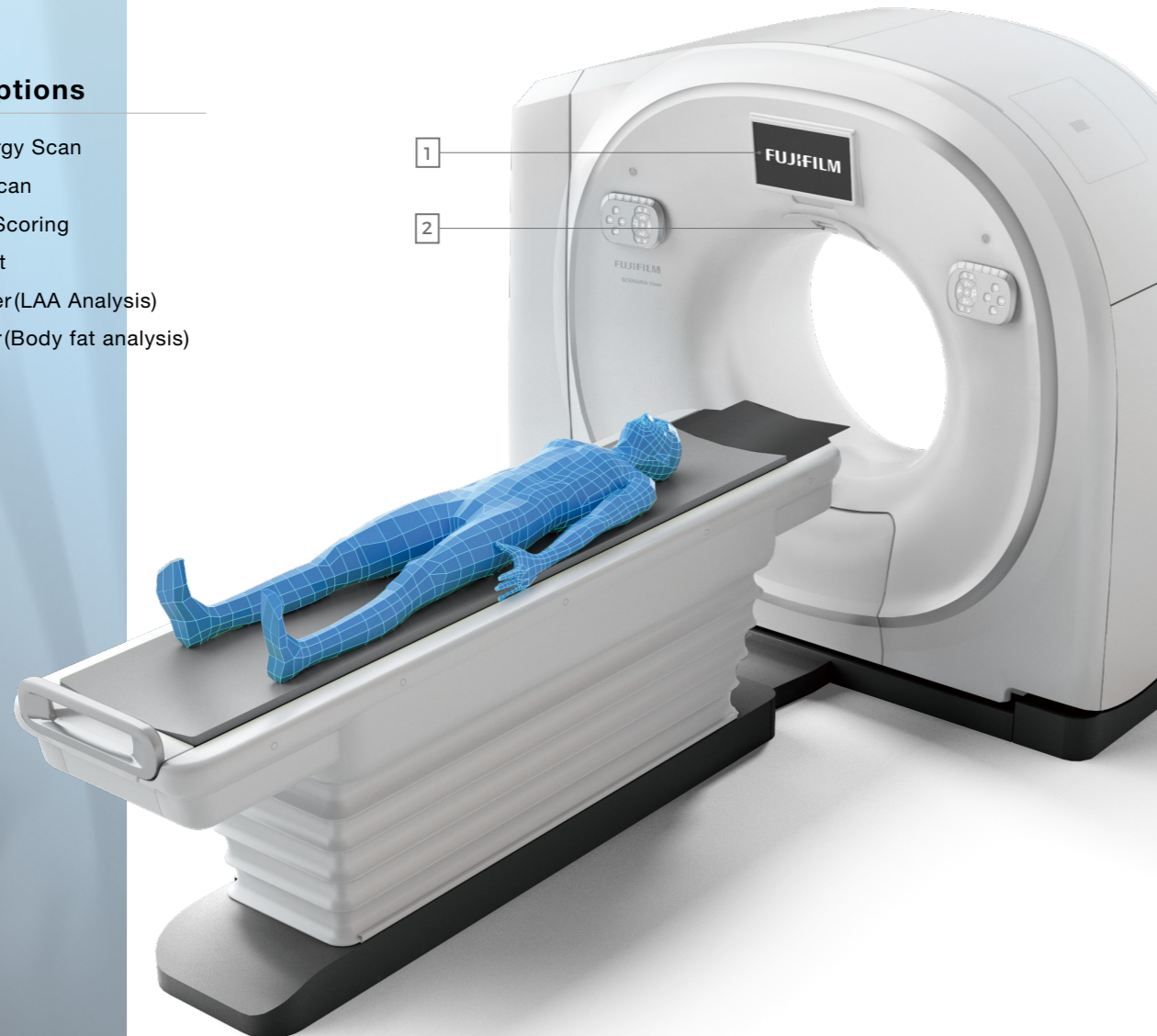
# Comfort

## Dose Management

### DICOM SR

Using the DICOM standard, it is possible to transfer dose information as a DICOM Structured Report (DICOM SR) to PACS etc.

### Simple Dose Report

Dose information can be transferred to PACS etc. as a secondary capture image.

DICOM SR
Simple Dose Report

PACS

## 3-Unit Design (Compact Space)

The entire system comprises just three components*; gantry, patient table and operator console. No additional units, such as system transformers, are required, so the space in the CT room can be maximized for clinical use.

*For power supply voltage 380/400V

## Eco mode

Eco mode has two functions (On-time Standby and Off-time mode).
The On-time Standby function controls the units mounted in the gantry, thereby reducing power consumption by up to 48% compared to Eco mode OFF.
The Off-time mode cuts off the electricity but maintains the operating readiness of the detector. With Off-time mode, the power consumption during standby is reduced by up to 60% compared to when not in use.