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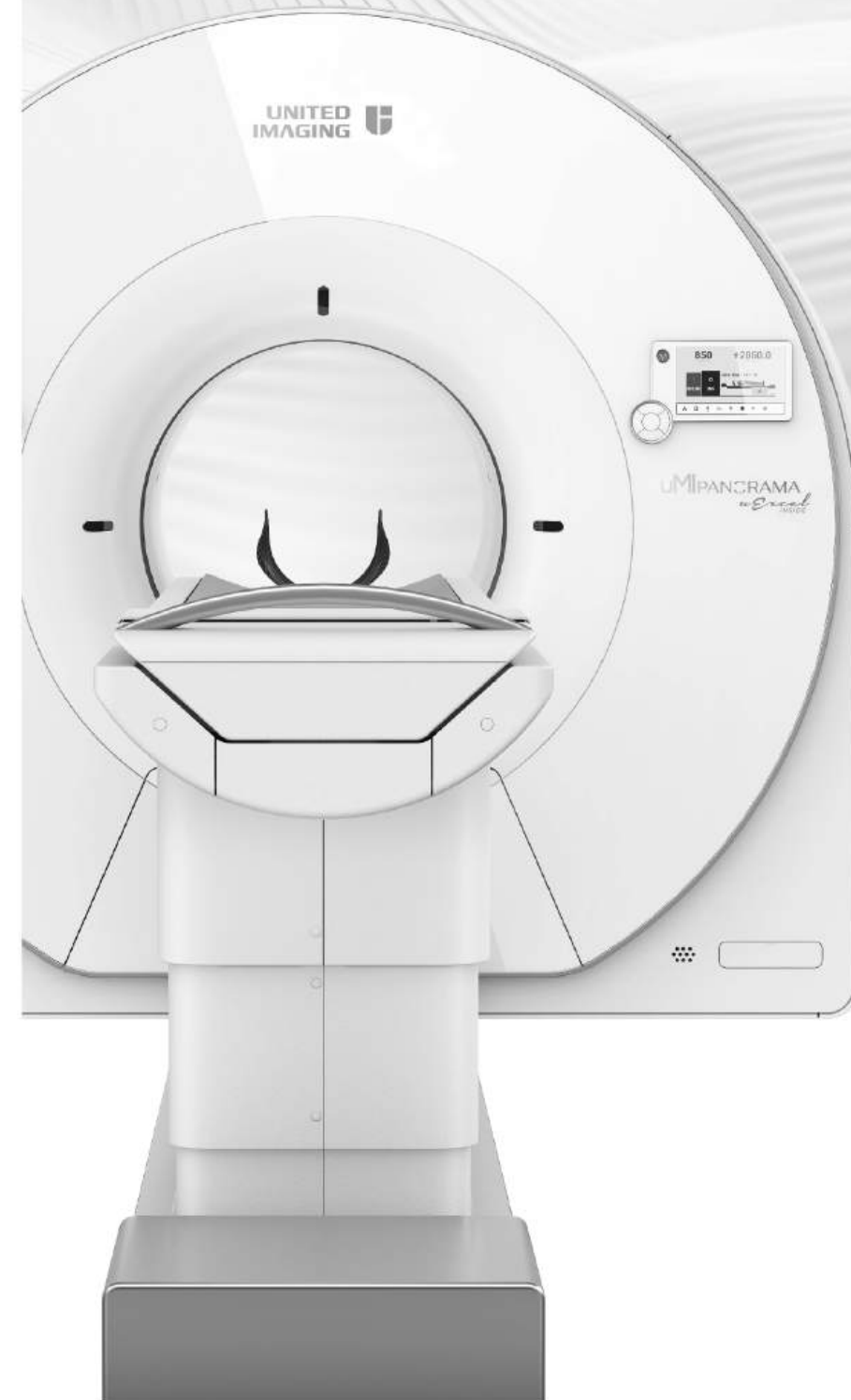


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ABOUT UIH

At United Imaging, we develop and produce advanced medical products, digital healthcare solutions, and intelligent solutions that cover the entire process of imaging diagnosis and treatment. Founded in 2011 with global headquarters in Shanghai, our company has subsidiaries and R&D centers across China, the United States, and other parts of the world. With a cutting-edge digital portfolio and a mission of broader access to healthcare for all, we help drive industry progress and bold change.

To learn more, visit <https://www.united-imaging.com>



uExcel
INSIDE
uMI
Panorama

**Breaking Barriers
in Every Direction**

uMI Panorama

Breaking Barriers in Every Direction to Meet Your Growing Expectations

Embrace a brand-new PET/CT imaging era of enhanced confidence in decision making, streamlined workflows, and expanded research opportunities with an ultra-high resolution digital PET/CT: uMI Panorama with uExcel technology platform.

uMI Panorama is clearly magnificent in every direction with the finest National Electrical Manufactures Association (NEMA) PET spatial resolution, truly-fast 189-picosecond (ps) time of flight (TOF), scalable axial field of view (FOV), the 76-cm super-wide bore and 318-kg (700-lb) table weight capacity that accommodates patients of all sizes.^[1] By leveraging the AI-powered features on the uExcel platform, it also boosts your daily work efficiency significantly and opens up new possibilities for your exploration.



03

Enhance Your Confidence with uExcel UDP

Redefine your expectations for precision with the Ultra Digital Platform (UDP) detector—uExcel UDP.



15

Maximize Your Routine with Artificial Intelligence

Draw on artificial intelligence of uMI Panorama for an all-new clinical workflow.



29

Unlock New Possibilities for Exploration

Venture beyond traditional boundaries with application versatility, embracing a future of breakthroughs.

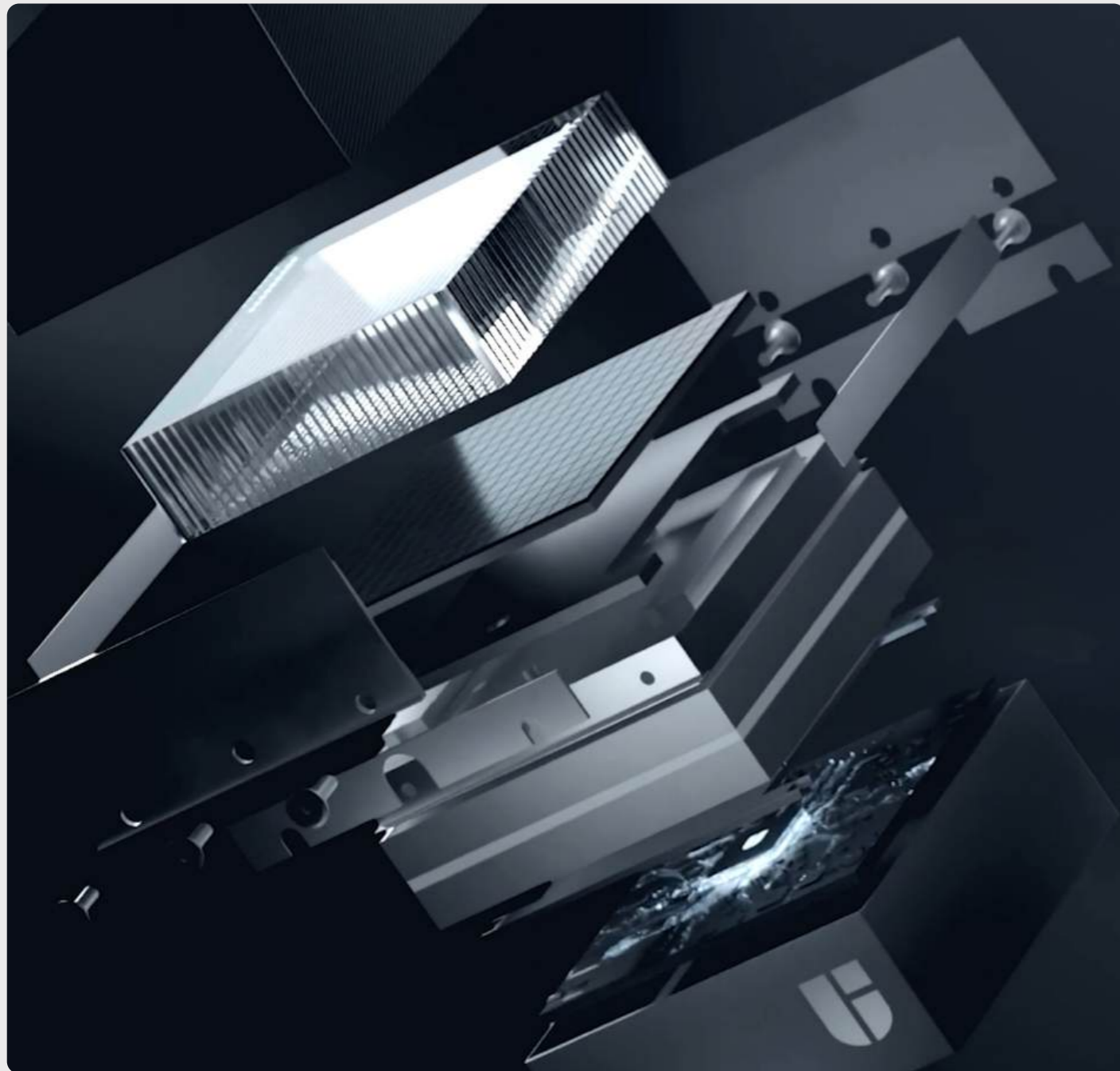


Enhance Your Confidence with uExcel UDP

You can confidently set a higher standard for any image before the first moment you experience uMI Panorama. It is born to redefine your expectations for precision, with the power of the uExcel UDP detector.

Introduce uExcel UDP

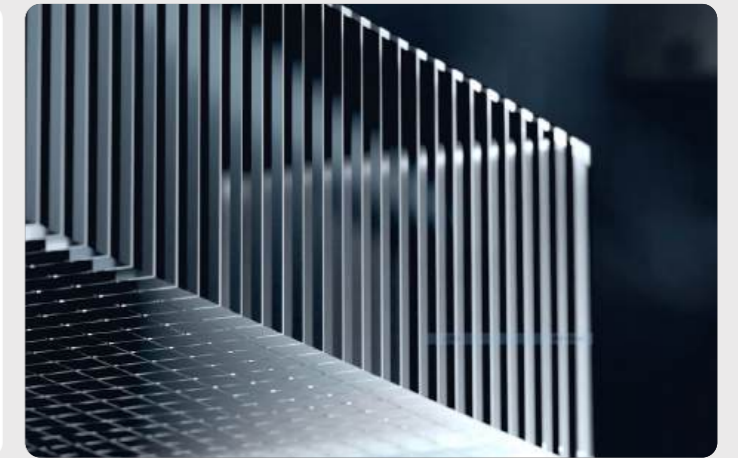
As the most critical component of a PET/CT system, the detector sets the quality benchmark for every image that never disappoints. uExcel UDP lays the groundwork for a quantum leap in uMI Panorama's system performance with its transcendent designing and manufacturing process.



2.76 mm

LYSO scintillation crystal

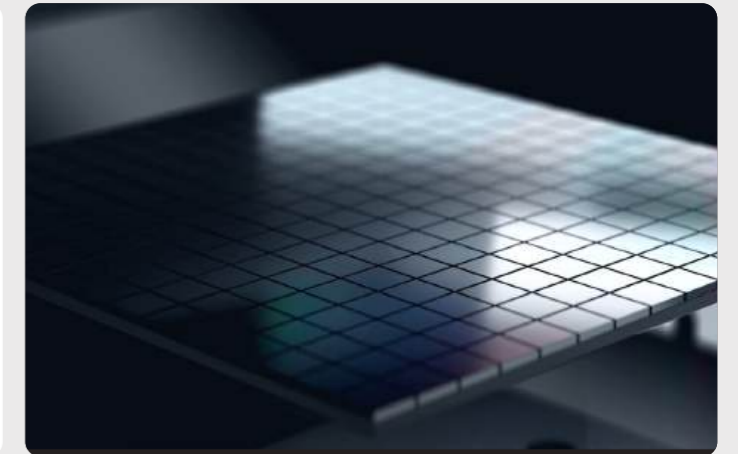
The 2.76 mm LYSO crystals, processed by the ultra-smooth surface polishing technique, deliver clear images with the exceptional NEMA spatial resolution of 2.9 mm.



SiPM Photosensor

100% coverage

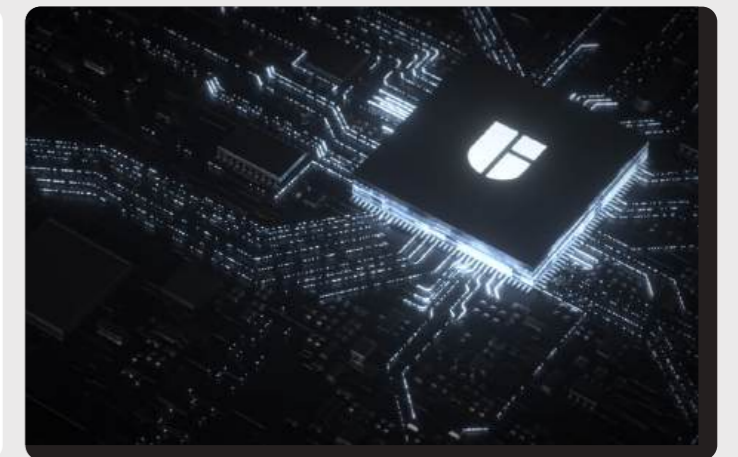
The 100% coverage of SiPMs on the crystal array ensures efficient light detection from the scintillator while minimizing signal attenuation.



Proprietary PET ASIC

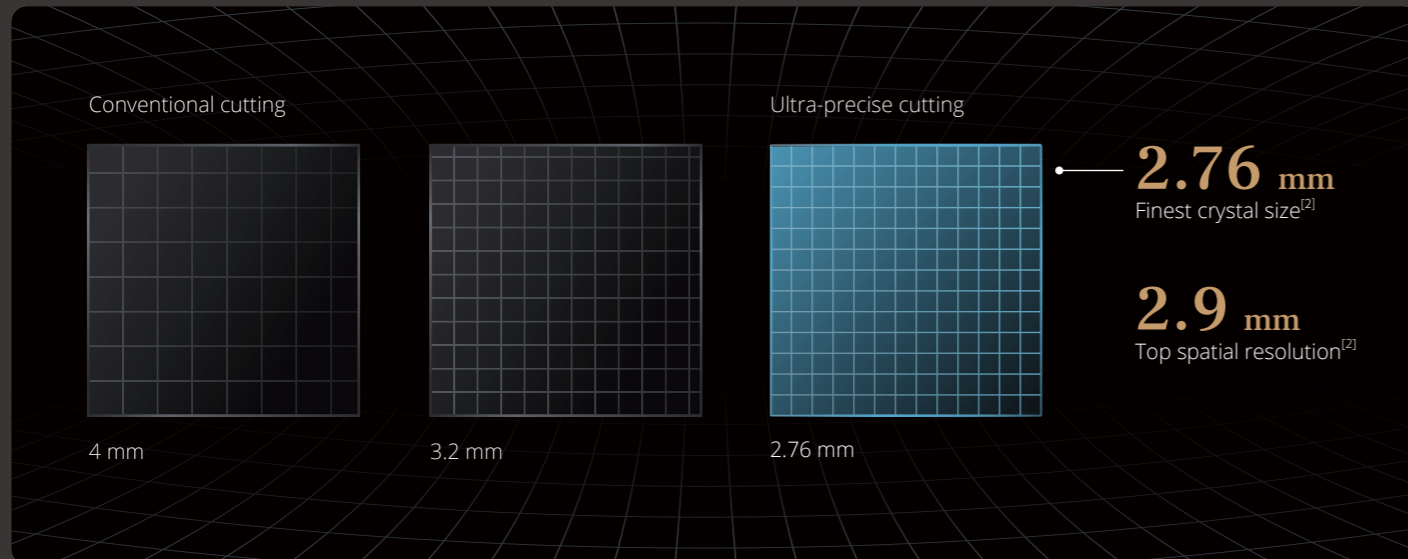
Digital circuit

The molecular imaging-specific integrated circuit uExcel ASIC, which is cultivated, cut, and selected in-house, excels in signal transmission speed and readout efficiency.

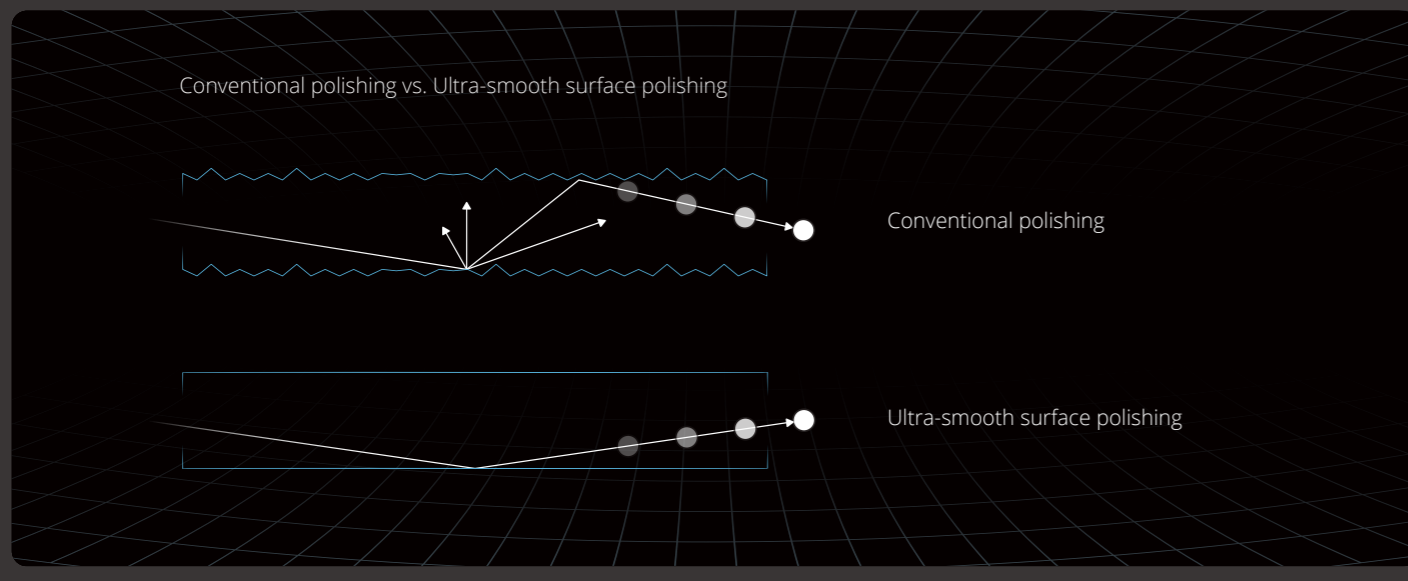


Discover How uExcel UDP Sets the Performance Benchmark for uMI Panorama

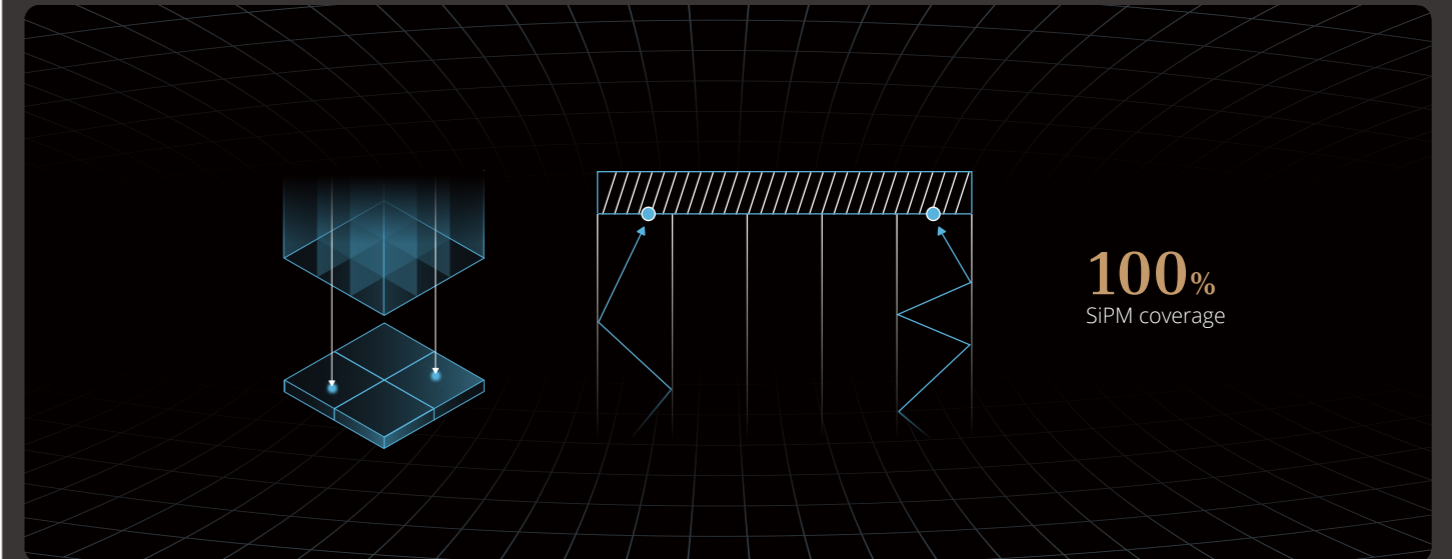
We cut the industry's finest crystal to maximize the spatial resolution.^[2]



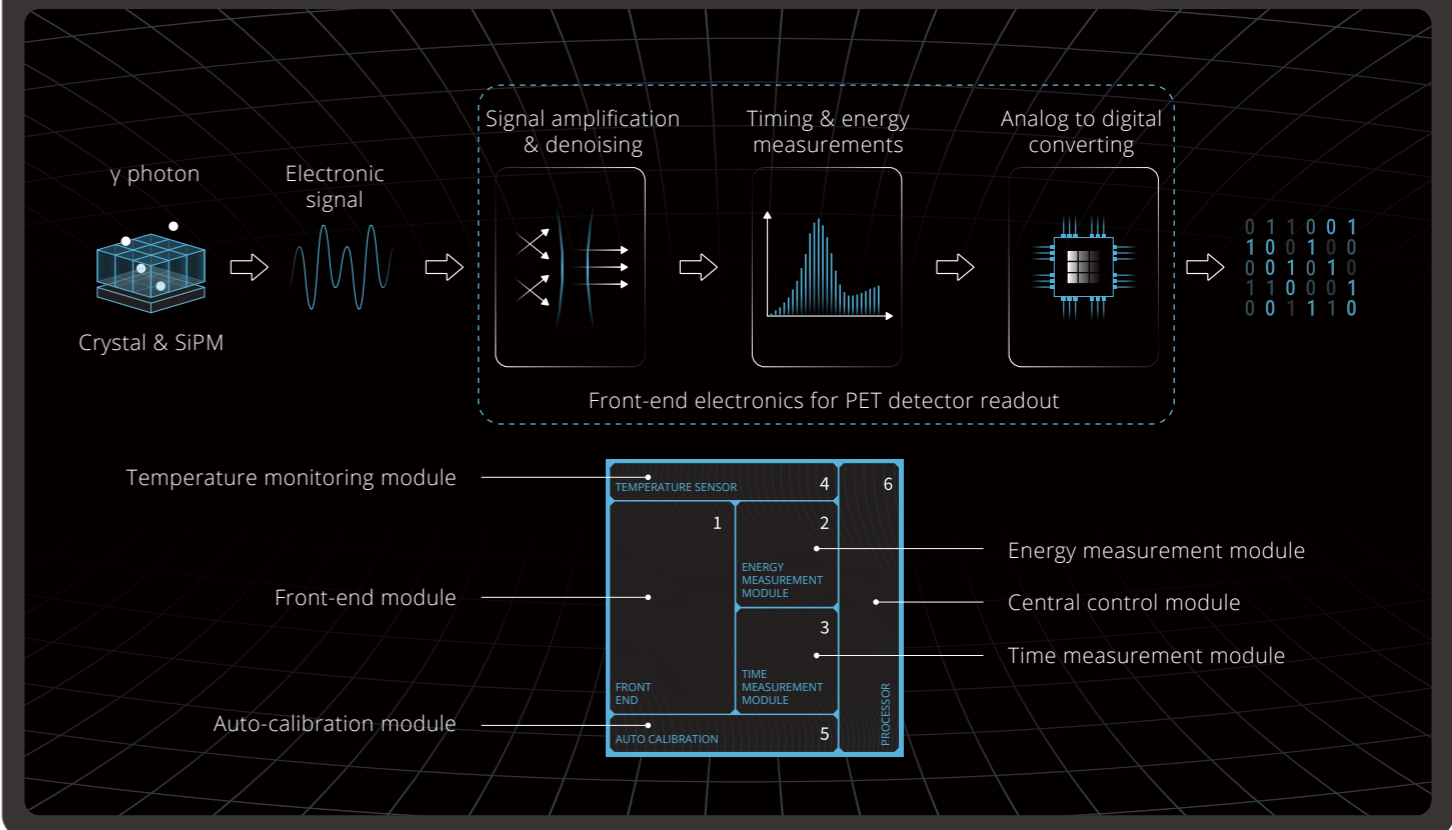
We polish the surface of each crystal, enabling more than 30% increase in light yield.^[1]



We maintain 100% SiPM (Silicon photomultiplier) sensor coverage on LYSO scintillator crystals to boost photon transmission efficiency and revolutionize imaging capabilities.



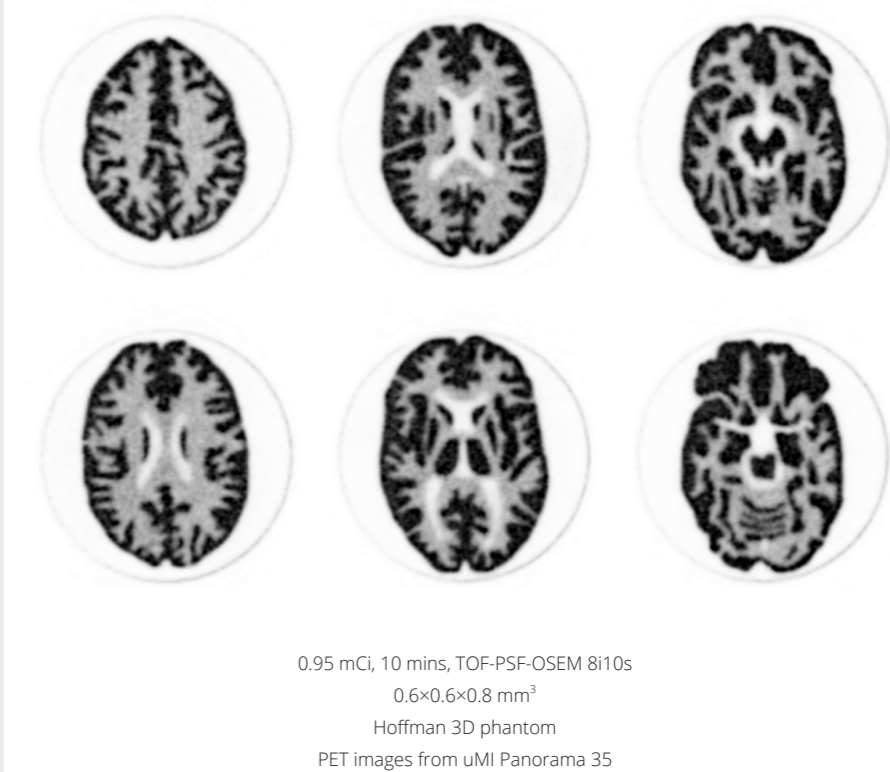
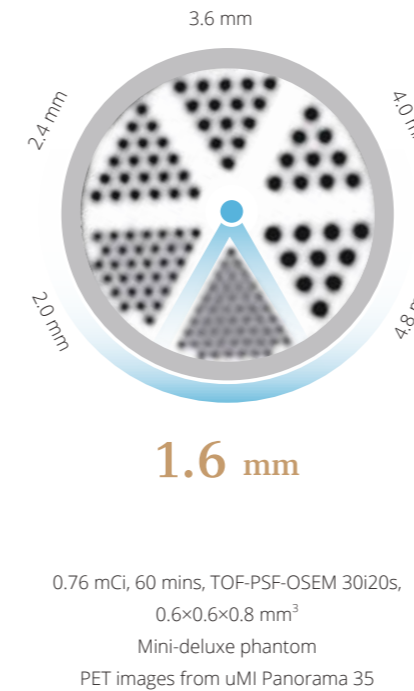
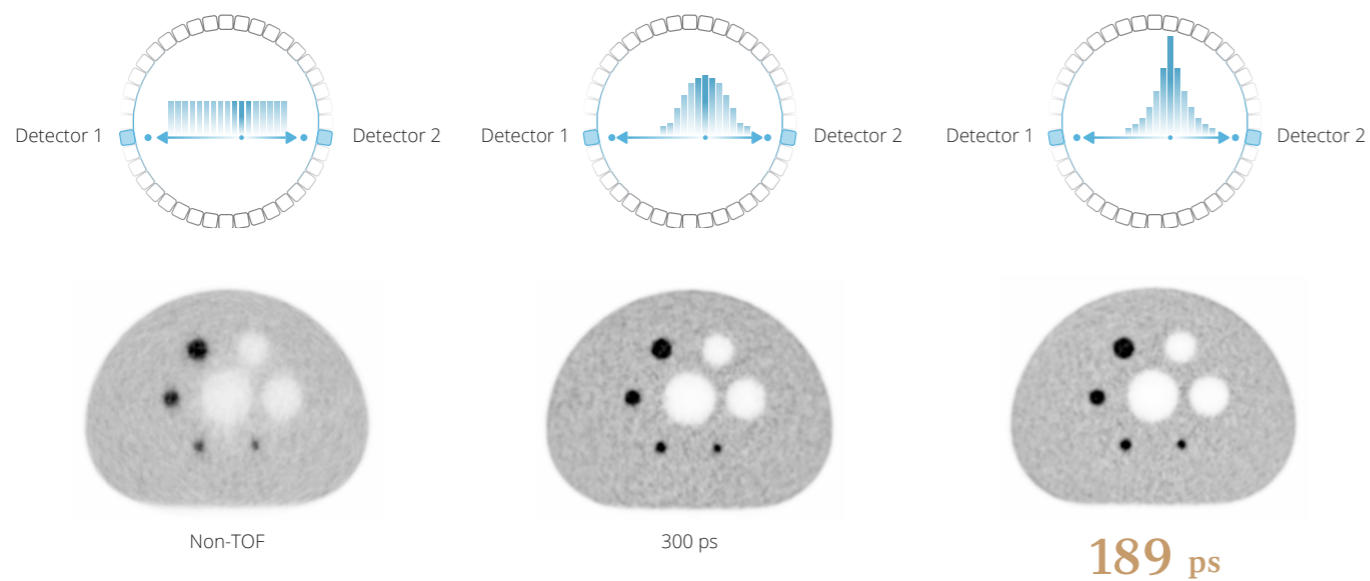
Our proprietary chip uExcel ASIC integrates multifunctions and supports super-sensitive signal transformation, leading to improved scanning efficiency and enhanced image quality.



Experience Newly Standardized Precision

uMI Panorama is the world's first PET/CT scanner commercially available with a time of flight performance faster than 190 ps.^[2] This next-gene system aspires to help you leap forward into a truly fast world where you can experience clarity and make clinical decisions more confidently than ever before.

Witness the leap in image quality with the ultra-fast 189 ps time of flight (TOF) resolution.



"We have evaluated the system performance... and the results are far beyond expectations... TOF resolution was 189 ps at 5.3 kBq/mL and was consistently lower than 200 ps for activity concentrations at or below the peak NECR."

Jing Wang, MD

President of the Chinese Society of Nuclear Medicine,
Xijing Hospital, Xi'an, Shaanxi, CHN



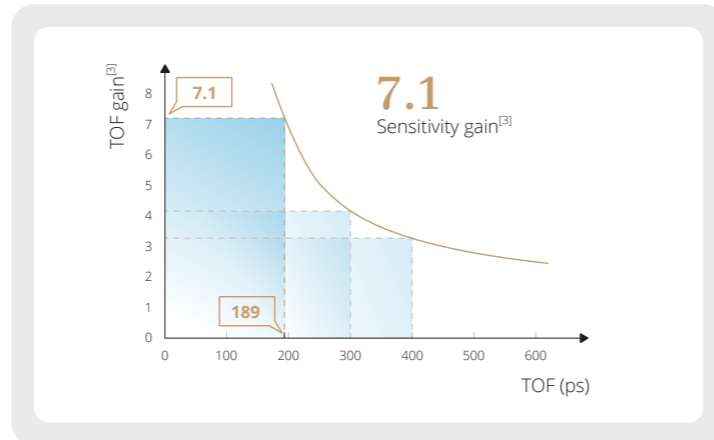
"Innovations of the uMI Panorama help redefine PET/CT performance standards... Clinical phantoms do not have small-enough lesions to characterize the uMI Panorama."

Jeffrey Yap, PhD

Director of Center for Quantitative Cancer Imaging,
Huntsman Cancer Institute, Salt Lake City, Utah, USA

Leverage TOF Gain to Make a Difference

With the ultra-fast 189-ps time resolution, uMI Panorama gains an enhanced effective sensitivity by 7.1 times^[3], facilitating small-lesion detection, localization and quantitation.



Non-TOF

189 ps

Non-TOF

¹⁸F-FDG, 10-min single-bed scanning, OSEM, uMI Panorama 35
Images courtesy of Xijing Hospital, SX, CHN

Non-TOF


189 ps

¹⁸F-FDG images acquired from uMI Panorama, with 189-ps TOF performance, demonstrate ultra-high sensitivity in detecting and delineating recurrent cutaneous squamous cell carcinoma.

1.2 mm
Lesion radius


2.3 mm
Distance between nodal centers

¹⁸F-FDG, 14-min whole-body scanning, OSEM, uMI Panorama 35
Images courtesy of Xijing Hospital, SX, CHN



"Our physicians called me within 15 minutes of receiving the images from the first patient on the uMI Panorama. They found a clinical finding that was just plain as day. When they went back and looked at the priors from a different scanner, they said, 'I think it's there', but we couldn't call it because we couldn't see it as well'. The Panorama had a clinical impact for the very first patient."

Stephen Lokitz, PhD
Executive Director and Director of Imaging Sciences, CMIT, BRF, Shreveport, Louisiana, USA



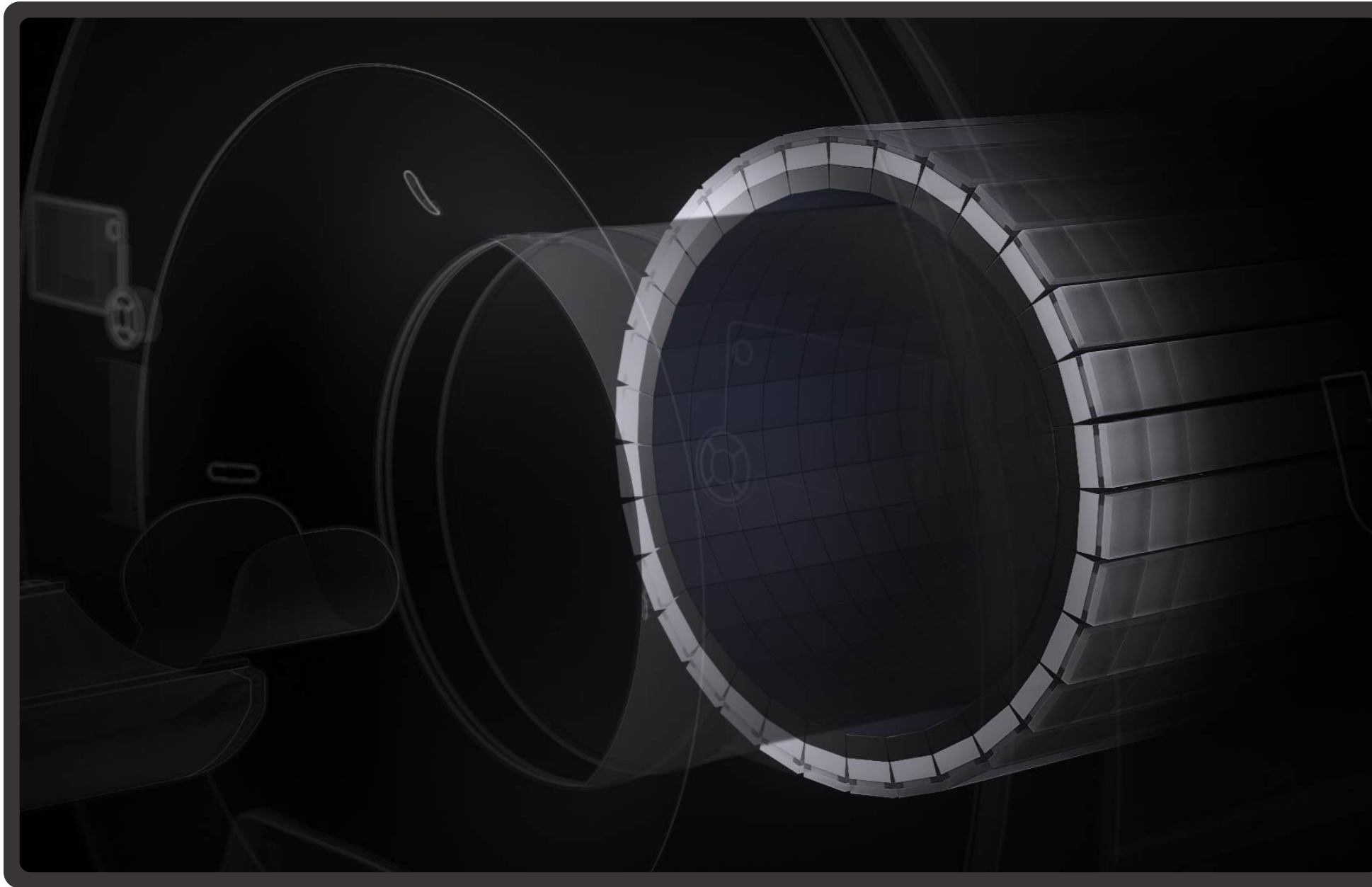
"Results from patient studies underscored the uMI Panorama system's clinical potential in enhancing diagnostic capabilities, particularly for smaller or lower-contrast lesions, leveraging its exceptional spatial resolution."

Fei Kang, MD
Director of Nuclear Medicine Department, Xijing Hospital, Xi'an, Shaanxi, CHN

Embrace Your Future with the Scalable Design

uMI Panorama delivers the highest possible performance, beneficial to your clinical use with deeper insights. But its scalable design helps you see further.

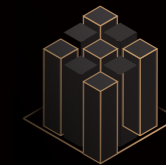
You can expect from a longer PET axial field of view to scan more critical organs within shorter time, to obtain high-quality images at a lower dose, to open up richer clinical or research scenarios. And we offer 28 cm, 35 cm and longer axial field of views for uMI Panorama to suit your changing needs.



We design the uExcel UDP detectors as miniaturized and modularized, which can be added on-site to support upgrades, ensuring a future-proof investment in your first uMI Panorama PET/CT scanner.

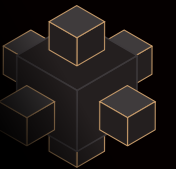
Miniaturization

Ultra-small signal readout unit



Modularity

Ultra-small functional unit



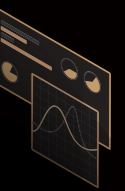
Cascading

Synchronous data link



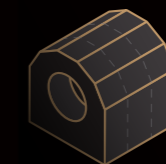
Parameterization

Ultra-small signal readout unit



Seamless packaging

Ultra-small functional unit



Full fiber optic

High-capacity data chain



A wireframe hand, composed of a grid of white lines, points its index finger towards the right. The background is a light blue gradient with faint, glowing digital elements like code snippets and data points, suggesting a high-tech or artificial intelligence theme.

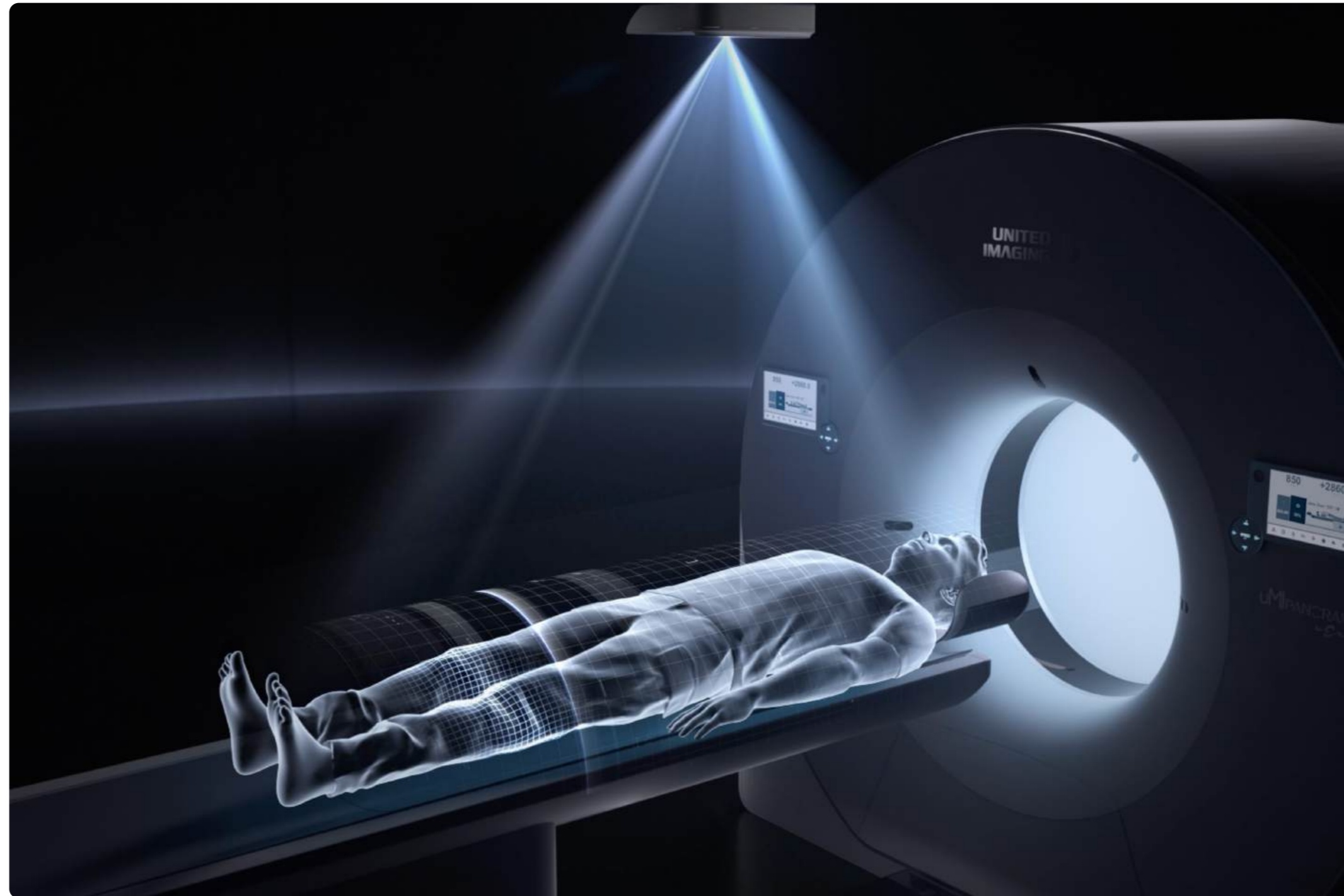
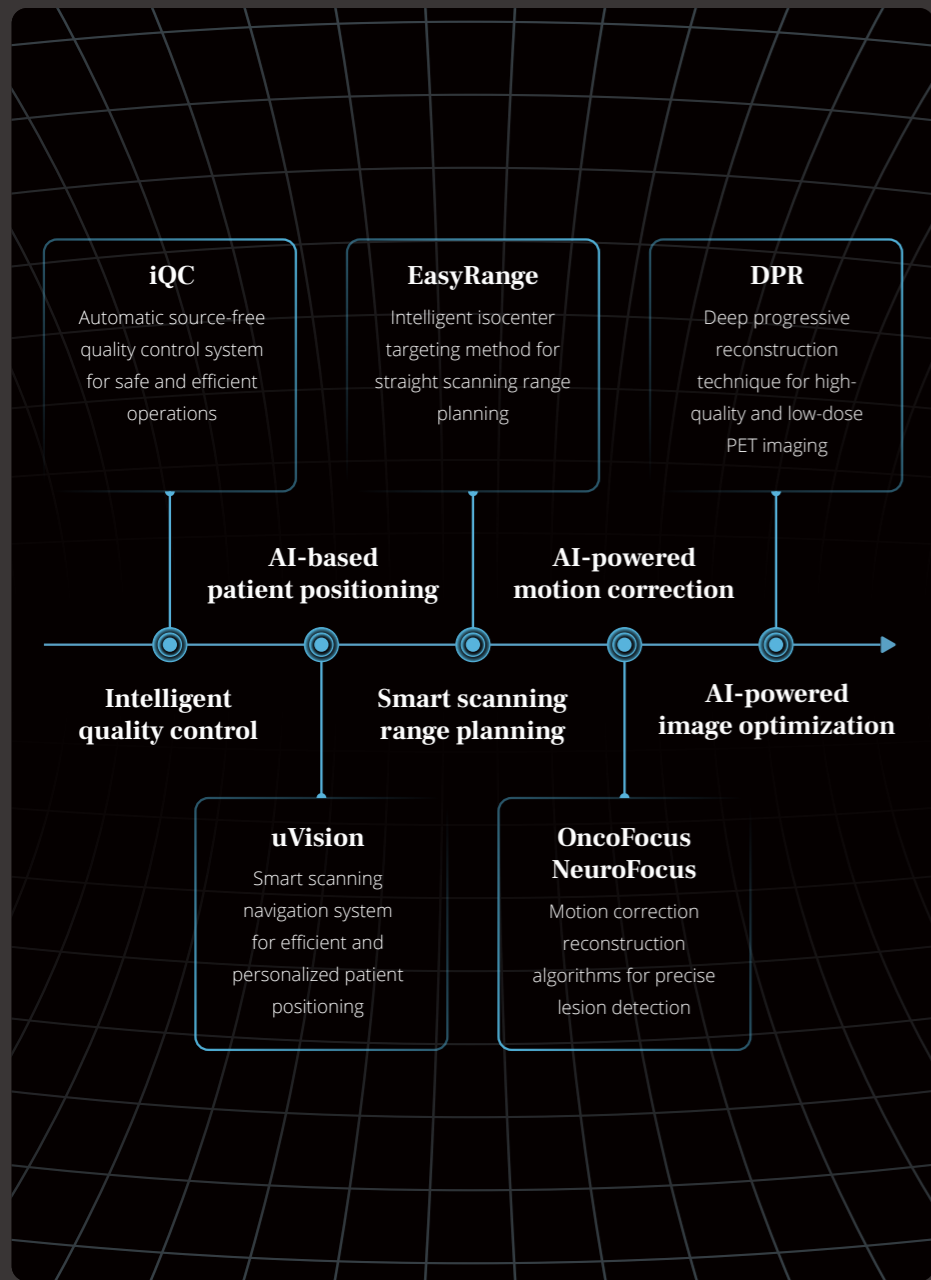
Maximize Your Routine with Artificial Intelligence

Your time, energy and security matter. Let artificial intelligence (AI) of uMI Panorama power and protect you. Maximize your routine with an AI-driven streamlined workflow.

Personalize and Optimize Your Procedures with Intelligence

uMI Panorama provides a unified-solution with its AI-powered scanning features, streamlining every step from patient setup to image reconstruction and data analysis, making precision imaging faster and easier.

Discover how intelligent tools power and protect you.



Position Your Patients Precisely and Easily with uVision

A simple, safe, and highly-efficient PET/CT scan starts with patient positioning. With the uVision 3D camera, you can experience fully-intelligent pre-scanning procedures, with just one click to activate the localizer and subsequently move the patient bed into the right position.

EasyPositioning

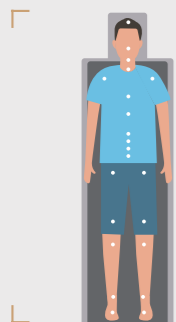
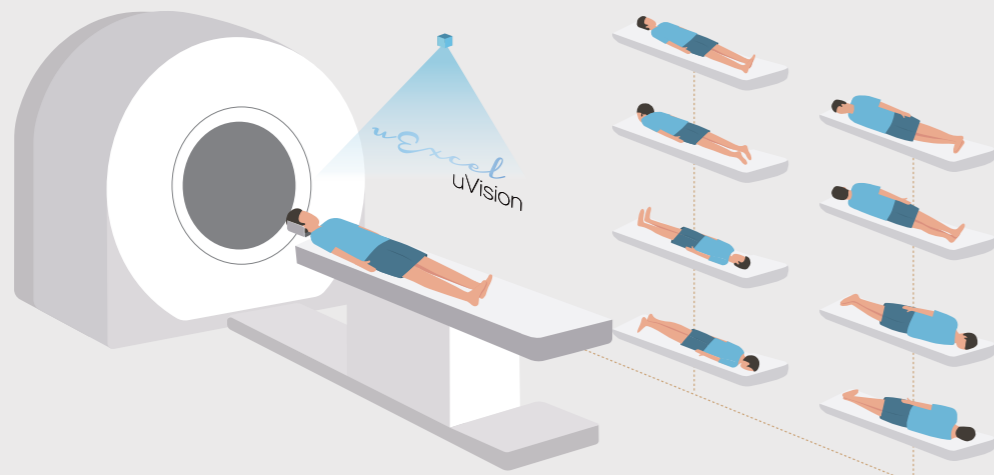
The EasyPositioning technology makes patient positioning standardized and intuitive by automatically optimizing the scout scan range based on the recognition of patient orientation, body shape, key landmarks of the body, and the selected protocol.

3D Camera

Automatically detecting the patient orientation to match protocols

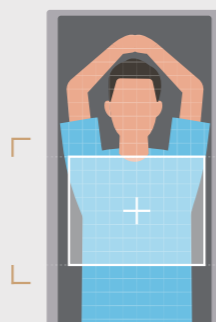
8 Poses

Automatically matching various clinical scenarios



22 Landmarks

Enabling the precise capture of the patient position



Real-time Detection

Monitoring the patient movement in real time and determining both the starting line and scan range

EasyISO

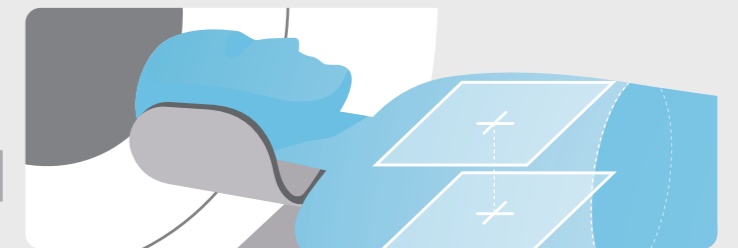
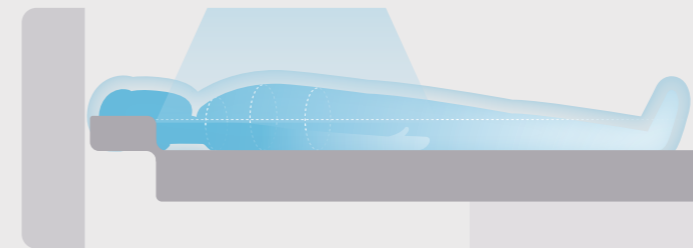
The EasyISO technology ensures high-quality CT images and optimized surface radiation dose by automatically adjusting the table height to the iso-center for each patient.

3D Modeling

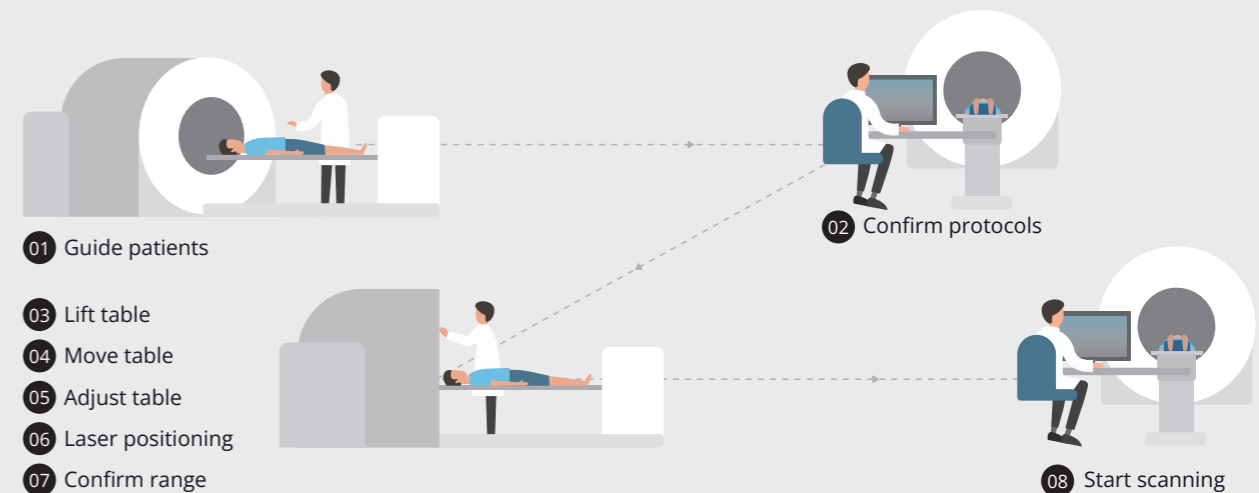
Detecting the subtle details of the target anatomy including body shape and thickness

Isocenter Positioning

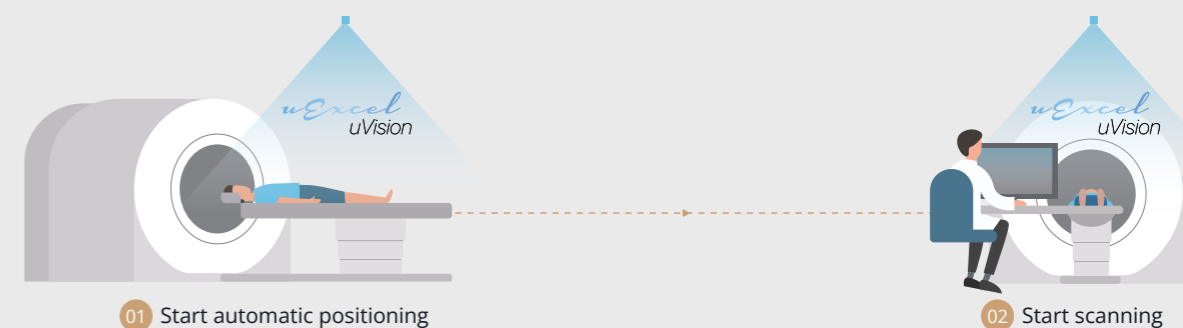
Aligning the table height with iso-center positioning by converting 3D modeling and depth detection information into the coordinate system



Traditional manual operation

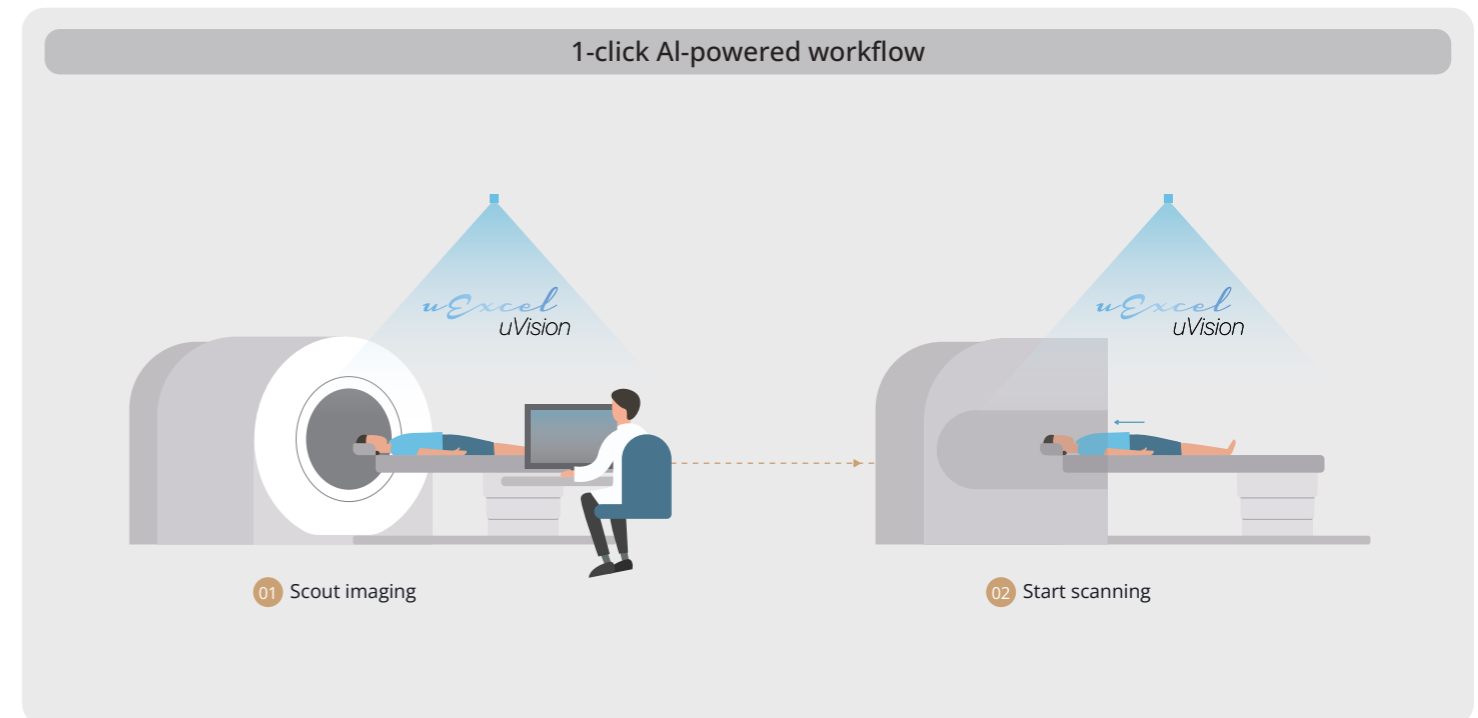
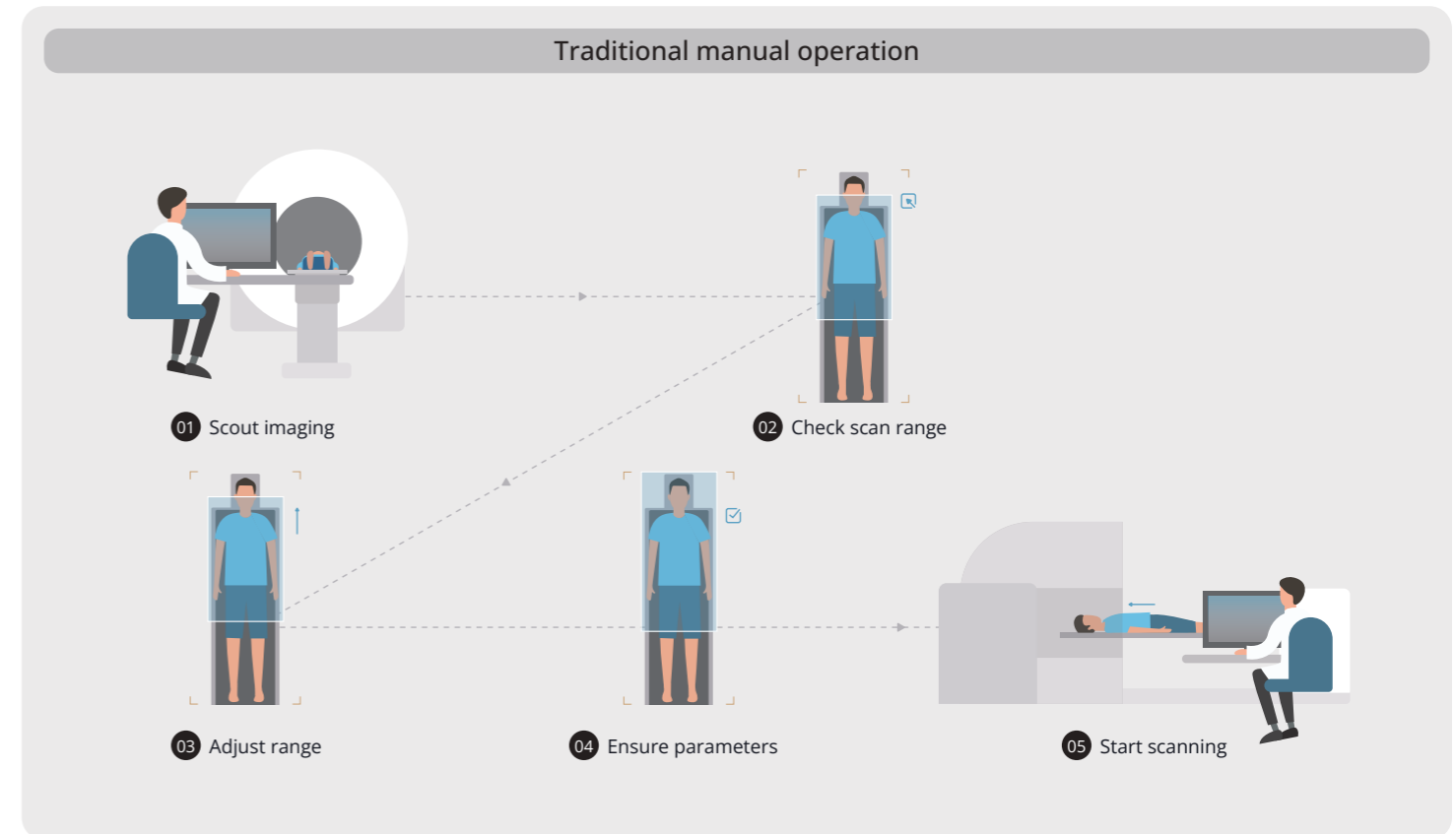
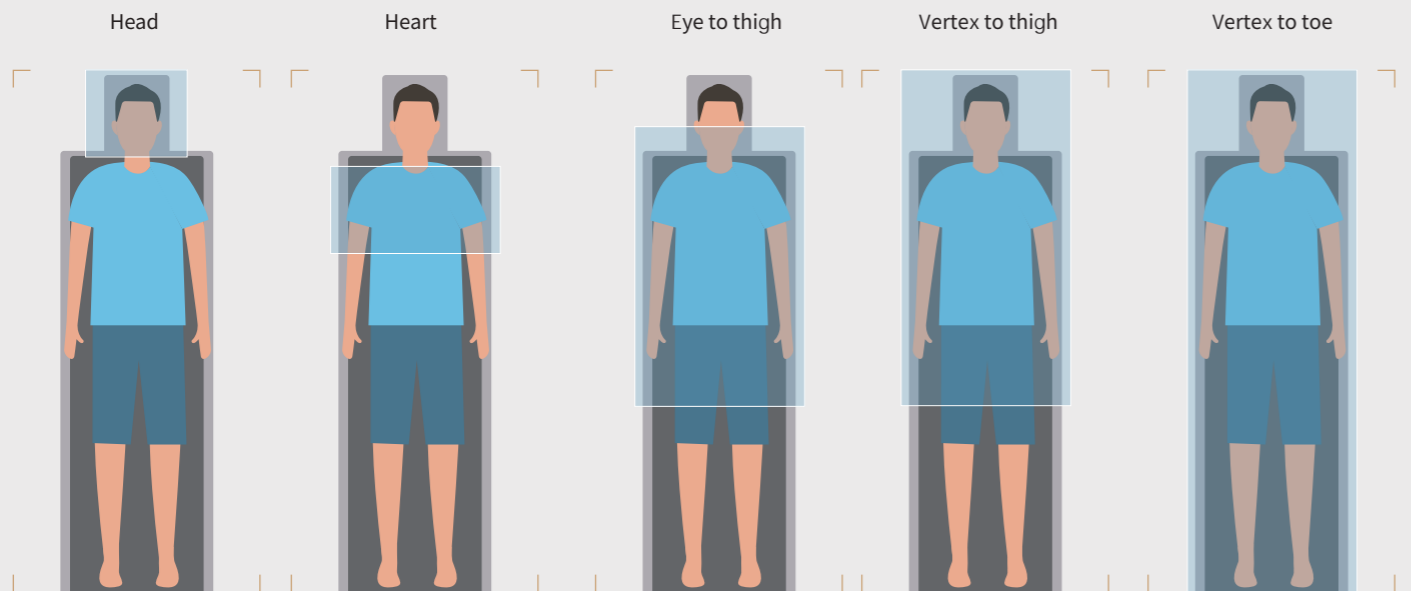


1-click AI-powered workflow



Plan the Scan Range Automatically with EasyRange

EasyRange (Auto Planbox) automates the planning of scanning ranges for the body, head, heart and other important parts, freeing you from manual adjustments.



Utilize OncoFocus to Reduce PET Respiratory Artifacts for Confident Decisions

Respiratory motion (RM) has become one of the most prevalent causes of image artifacts, especially in terms of RM induced image resolution loss in PET, PET-CT misalignment caused attenuation correction (AC) artifact and lesion mis-localization due to PET-CT misalignment. ^[4] uMI Panorama delivers a unified motion-correction solution with OncoFocus, which is powered by AI to effectively mitigates respiratory motion artifacts in PET/CT images while addressing PET-CT misalignment issues. It leverages 100% of data acquired during scanning to enhance SUV (standard uptake value) quantification accuracy and lesion measurement precision, empowering you to make decisions with more confidence.

Enhance image reproducibility and reliability with a unified technical solution

Restore clarity to the motion-blurred

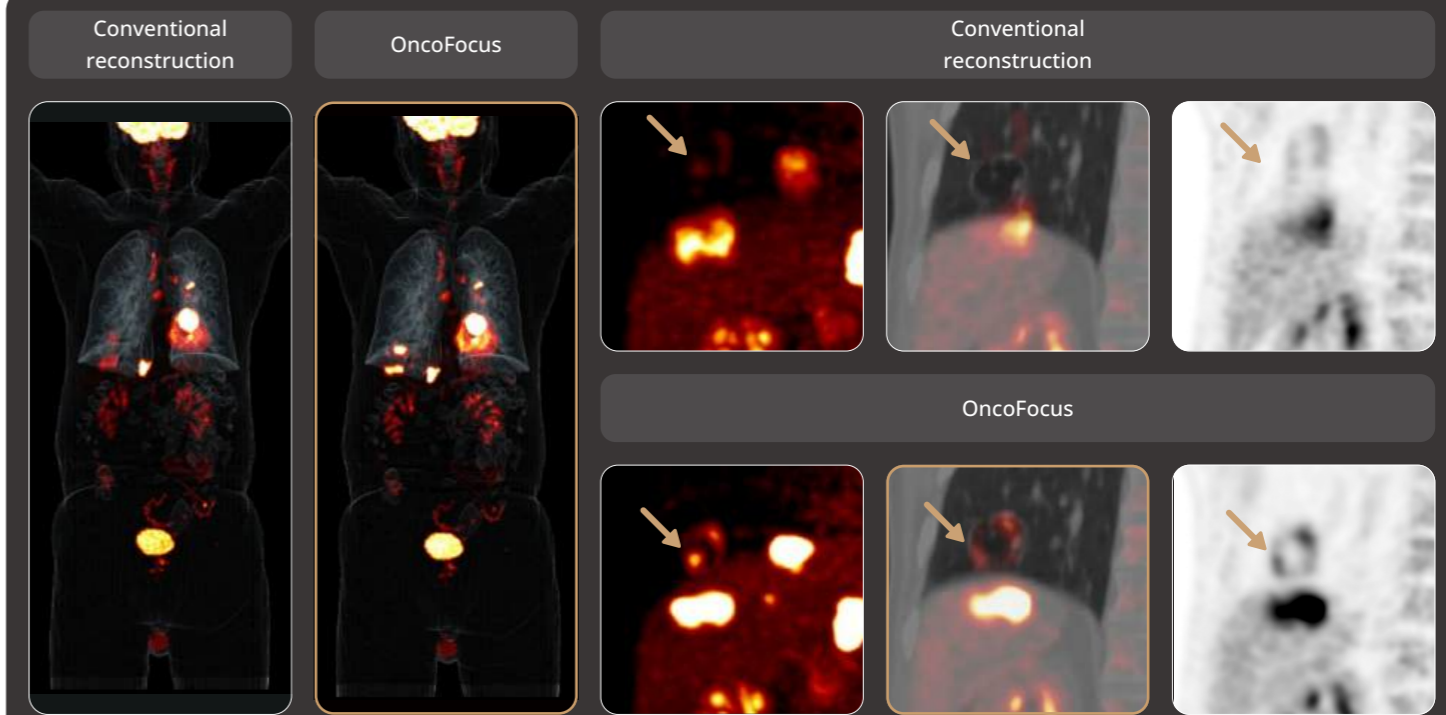
Restore clarity to lesions that are morphologically variable, hard to detect, or difficult to quantify due to respiratory artifacts

Revive ultra-high resolution

Revive initially-high resolution in the areas of breathing artifacts for a leap in quality of reconstructed images

Resolve the AC artifacts under PET-CT misalignments

Resolve the attenuation correction artifacts caused by misalignment of PET and CT images for accurate lesion quantification



The image displays a comparison of PET/CT scans. On the left, a full-body scan is shown side-by-side for 'Conventional reconstruction' and 'OncoFocus'. On the right, three zoomed-in views are provided for each reconstruction type: PET (top row), PET-CT fusion (middle row), and CT (bottom row). Yellow arrows in the zoomed-in views point to specific lesions in the lung and liver, demonstrating that the OncoFocus reconstruction provides significantly clearer and more defined images compared to the conventional method.

Motion-corrected PET images clearly show increased uptake of the cystic wall in the lung cavity of the lower lobe of the right lung and accurately render the liver metastatic lesion

¹⁸F-FDG, 6-min whole-body scanning, uMI Panorama 35
Images courtesy of Xijing Hospital, SX, CHN

Discover the motion-correction-beyond capabilities for ease

Need no external devices

Use 100% of data acquired with or without external devices

Regain precision with one click

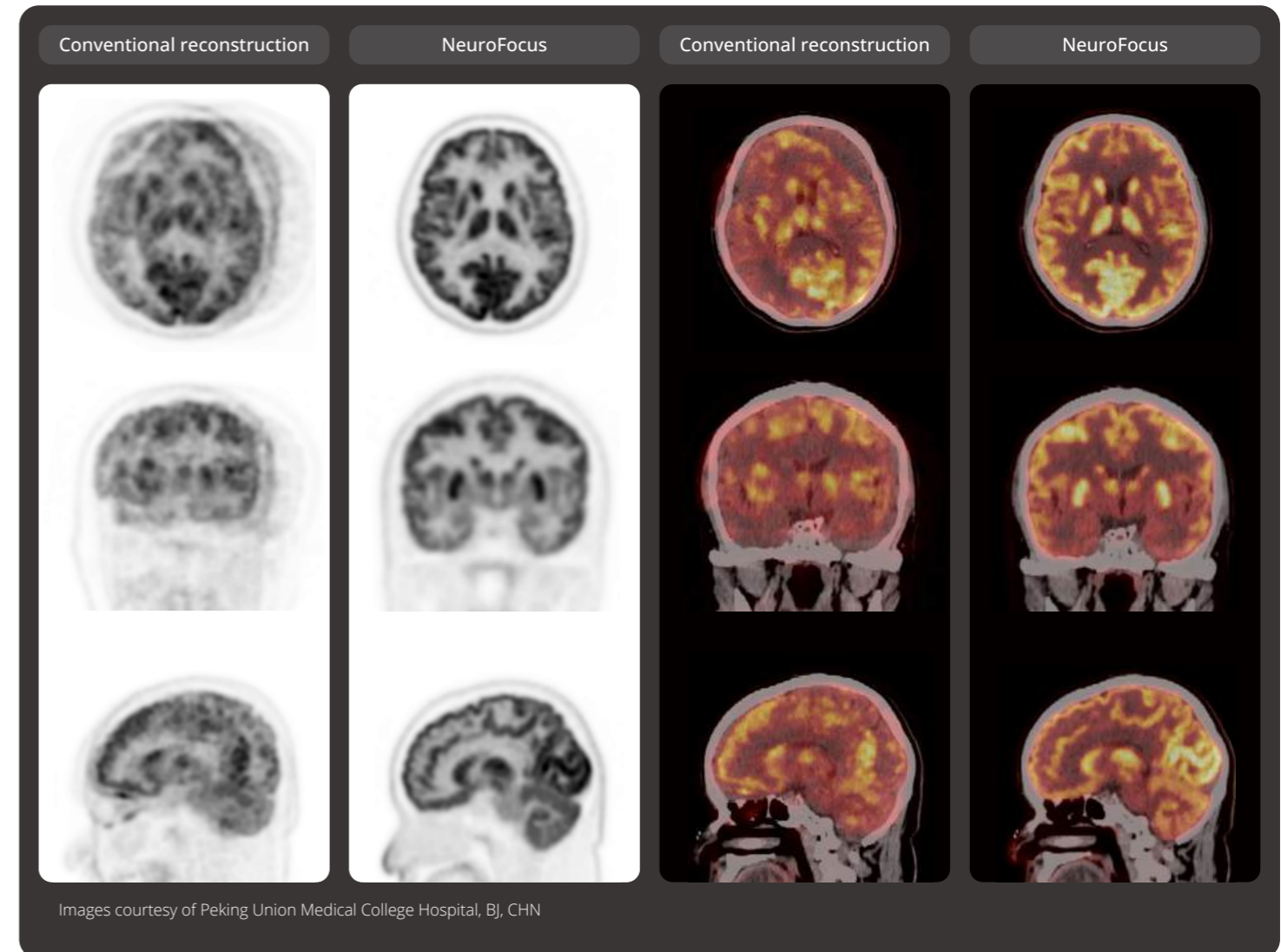
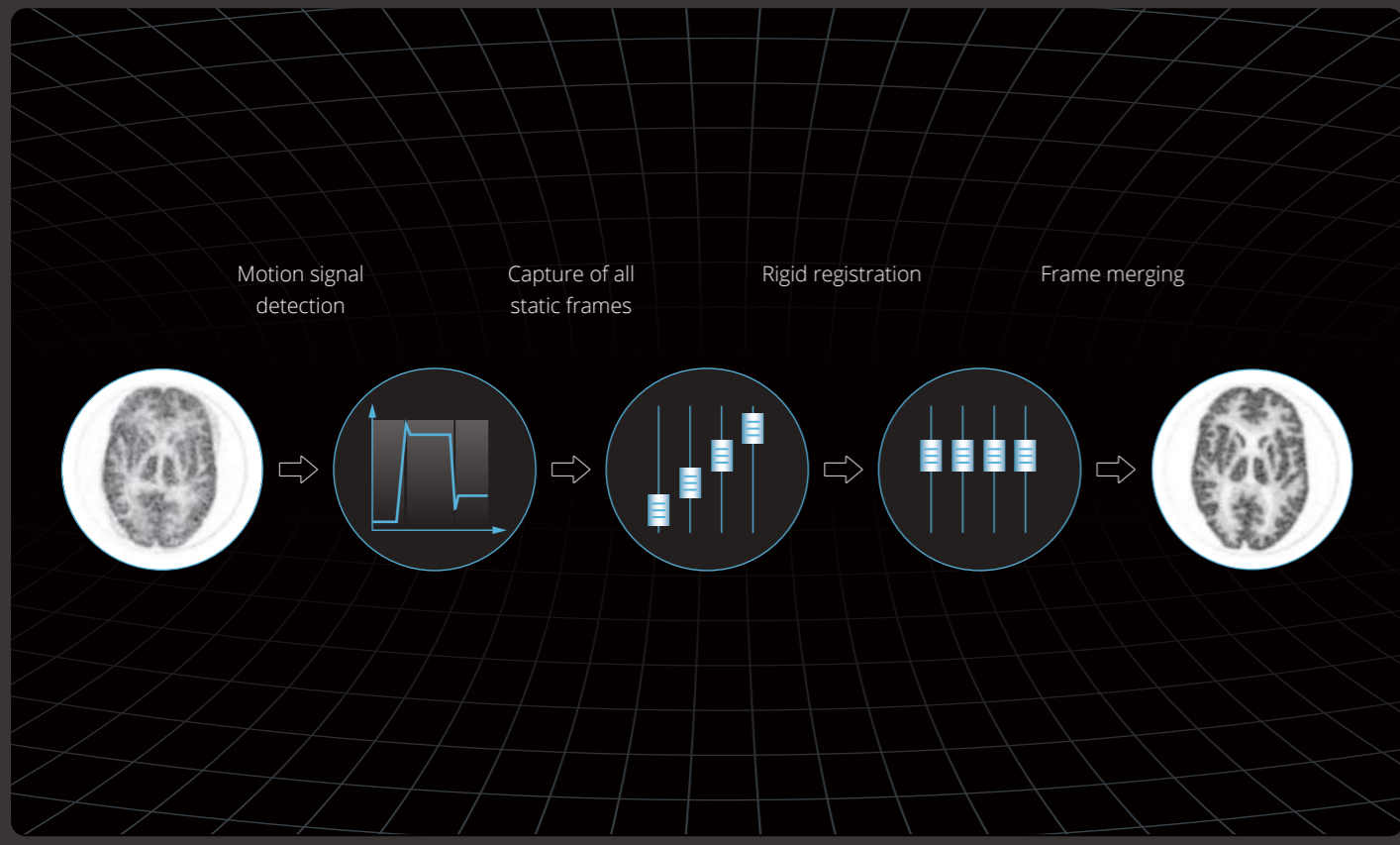
Activate the motion-correction reconstruction with just one-click

Utilize NeuroFocus to Improve the Repeatability of Brain Images

Brain PET imaging often faces challenges from head motion (HM), which can introduce artifacts and reduce image resolution, crucial in clinical settings for accurate treatment planning, diagnosis, and monitoring.^[5]

NeuroFocus, built in uMI Panorama, presents an innovative solution for head-motion artifacts with a data-driven motion detection method that does not require external motion tracking devices. This approach is the industry's first head motion correction algorithm and supports multiple-tracer brain imaging, enabling improved clinical efficiencies and outcomes.

Discover how NeuroFocus works without external devices.^[6]



"NeuroFocus can reduce the clinical necessity for rescanning patients due to head motion, thereby improving the patient experience and streamlining the diagnostic process."

Fei Kang, MD
Director of Nuclear Medicine Department,
Xijing Hospital, Xi'an, Shaanxi, CHN

Enhance Your Efficiency and Patient Care with uExcel DPR

We understand the need of your patients for a smoother, safer, and more efficient examination experience. That's why we have created uExcel DPR – the AI Iterative reconstruction engine specifically designed for PET images in ultra-fast and ultra-low-dose scans. By enhancing the signal-to-noise ratio of images and eliminating noise, uExcel DPR optimizes the PET images to meet clinical diagnostic standards while reducing patient discomfort.

Discover overall image quality improvement compared with conventional OSEM reconstruction^[1] as:

43%

Noise reduction improvement

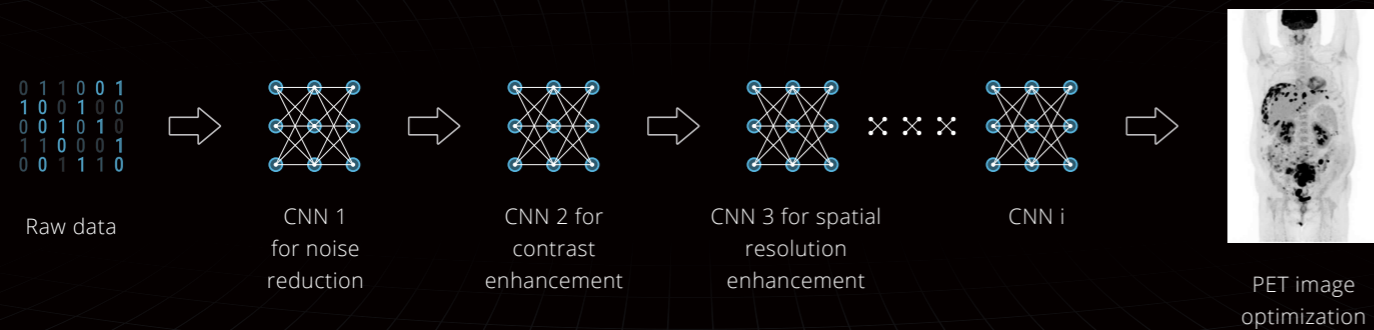
33%

Image contrast improvement

109%

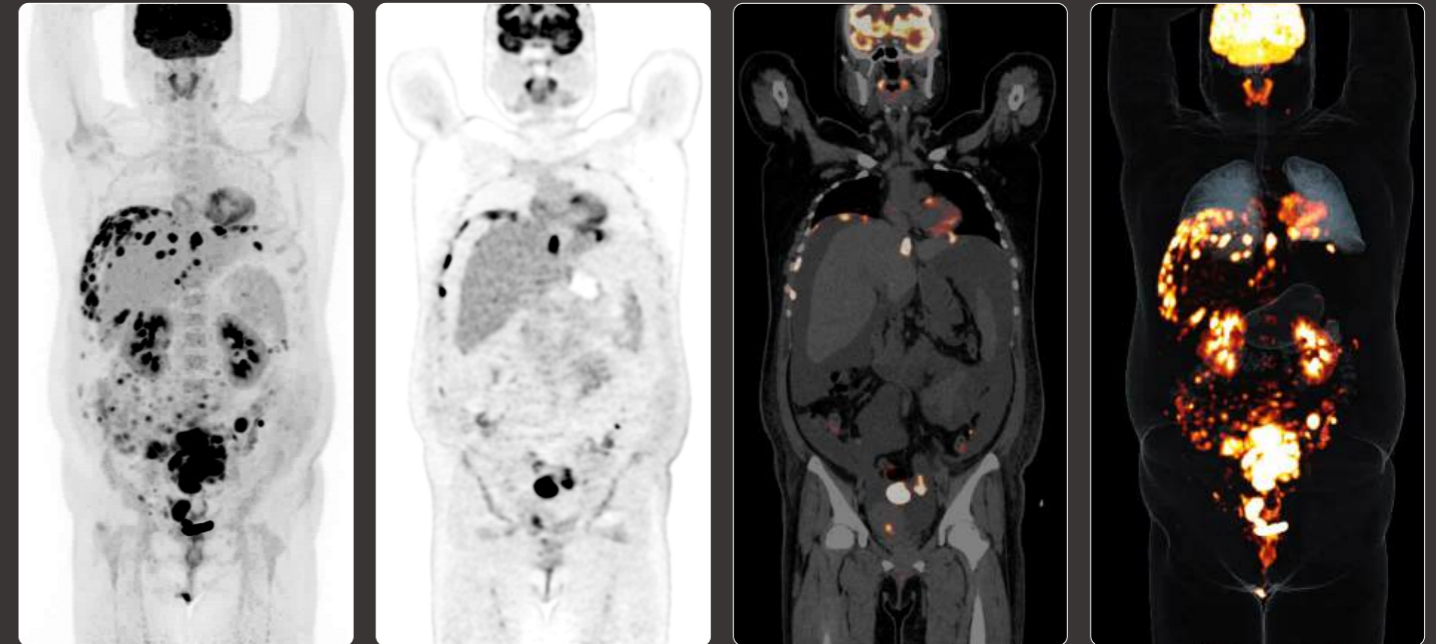
Contrast-to-noise ratio (CNR) improvement

uExcel DPR incorporates multiple Convolutional Neural Networks (CNN) into the iterative part of the OSEM algorithm to generate low noise and high contrast ¹⁸F-FDG PET images.



Images courtesy of Xijing Hospital, SH, CHN

Experience next-generation AI PET reconstruction for improvements in speed, dose reduction, image quality, and diagnostic confidence with uExcel DPR.



¹⁸F-FDG, 303 MBq, 2.96 MBq/kg, 2-min whole-body scanning, uExcel DPR, uMI Panorama 35

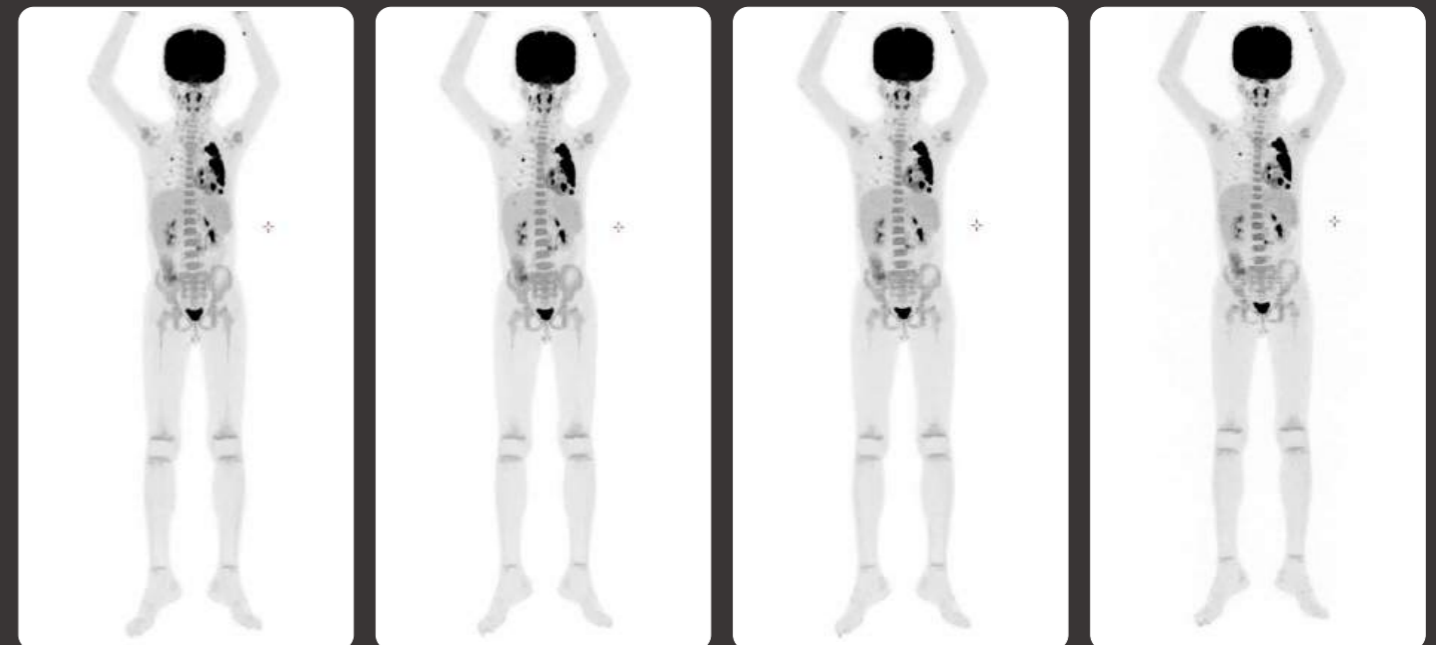
Images courtesy of Xijing Hospital, SX, CHN

3-min/bed scanning with OSEM

3-min/bed scanning with uExcel DPR

1-min/bed scanning with uExcel DPR

30-s/bed scanning with uExcel DPR



¹⁸F-FDG, 62.50 MBq, 2.60 MBq/kg, 30-s/bed whole-body scanning, uExcel DPR, uMI Panorama 35

Images courtesy of the First Affiliated Hospital of Guangzhou Medical Hospital, GD, CHN



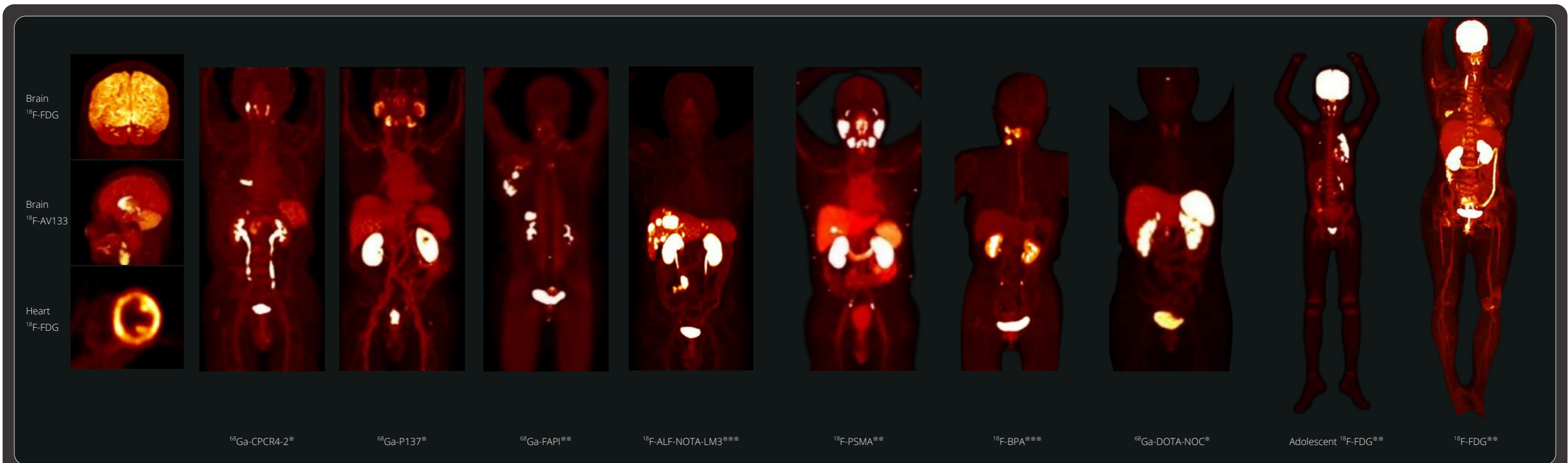
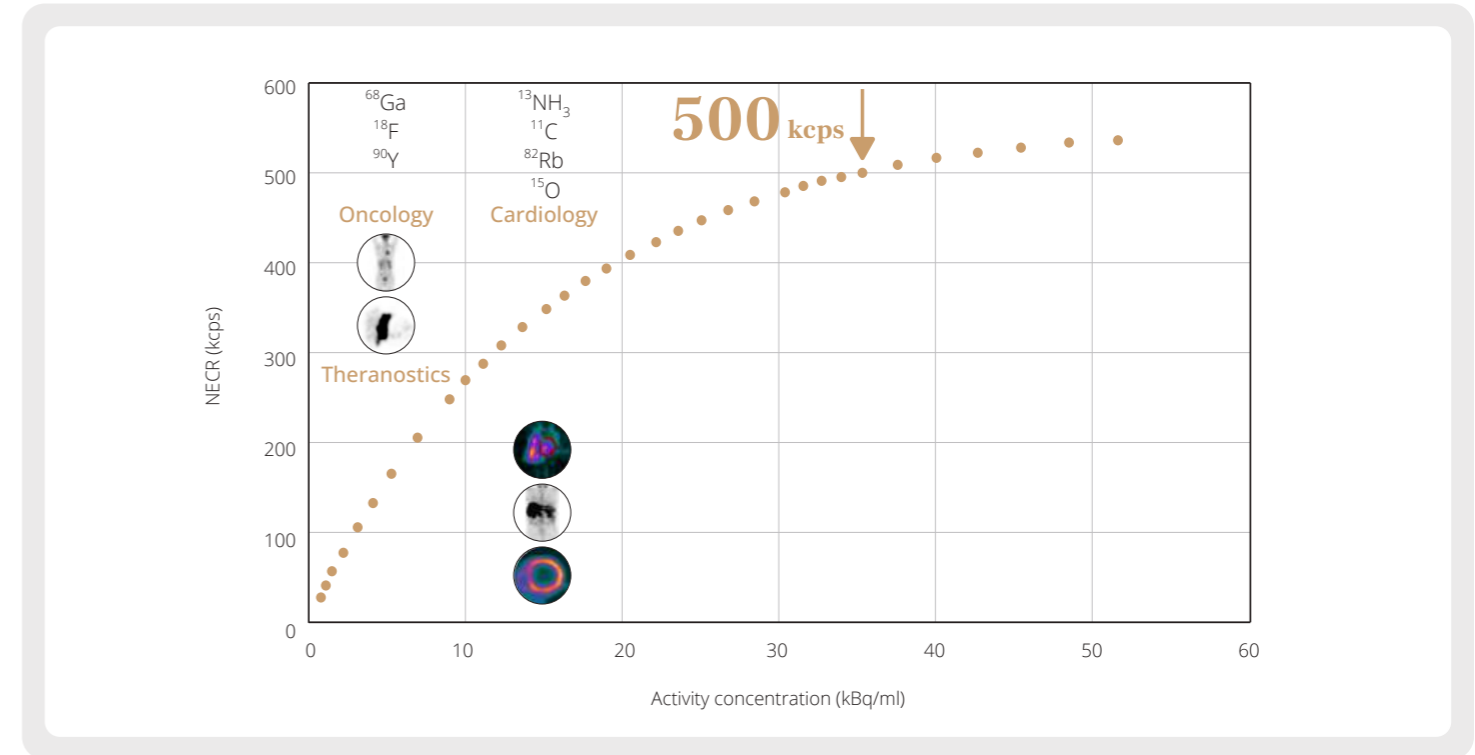
Unlock New Possibilities for Exploration

Venture beyond traditional boundaries and embrace a future of breakthroughs with uMI Panorama, which offers support for all-tracer imaging and application versatility to meet your needs today and tomorrow.

Explore a New World with Panoramic Clinical Insights

Today, theranostics advances new missions - identifying specific therapeutic targets, predicting treatment outcomes, and analyzing the behavior of new therapeutic agents and tracers in the body. uMI Panorama is ready to take on the new missions with its ultra high performance and versatile capabilities.

With the ultra-high peak noise equivalent count rate (p-NECR)^[8], uMI Panorama faces up to the challenges of tracers with different half lives, a wide range of tracer activity concentrations and the complex decay process with prompt gamma rays, without compromise for image quality.

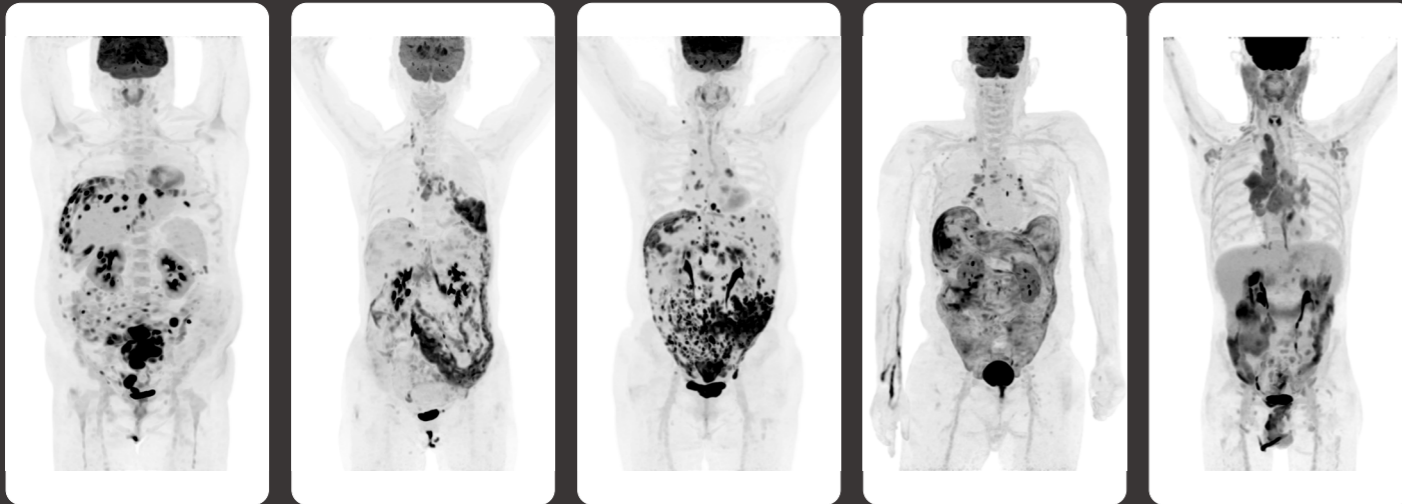


※ Images courtesy of Xijing Hospital, SX, CHN
 ※※ Images courtesy of the First Affiliated Hospital of Guangzhou Medical University, GD, CHN
 ※※※ Images courtesy of Peking Union Medical College Hospital, BJ, CHN

Explore a Wide Variety of High-quality Imaging Scenarios

High-resolution tumor and infectious disease imaging

Endometrial carcinoma Infectious peritonitis Ovarian carcinoma Tuberculous peritonitis Peritoneal lymphomatosis



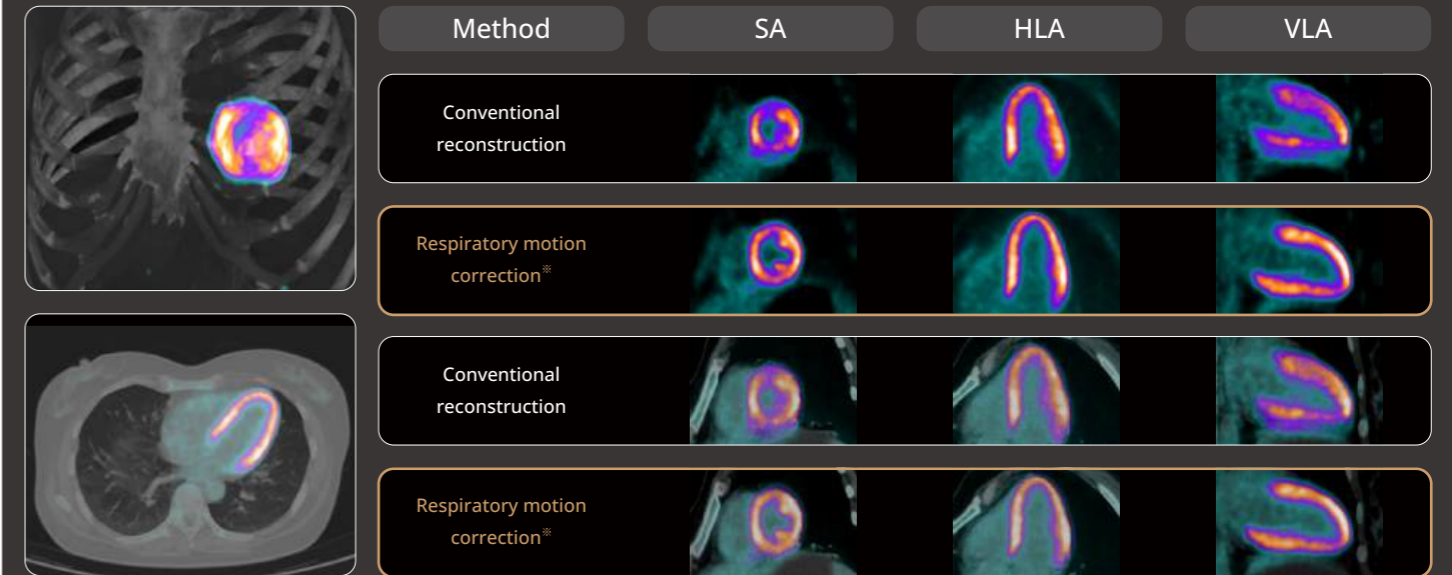
¹⁸F-FDG, 3.81~5.25 MBq/kg, 6-min whole-body scanning, uExcel DPR
Images courtesy of the First Affiliated Hospital of Guangzhou Medical University, GD, CHN

High-resolution brain imaging



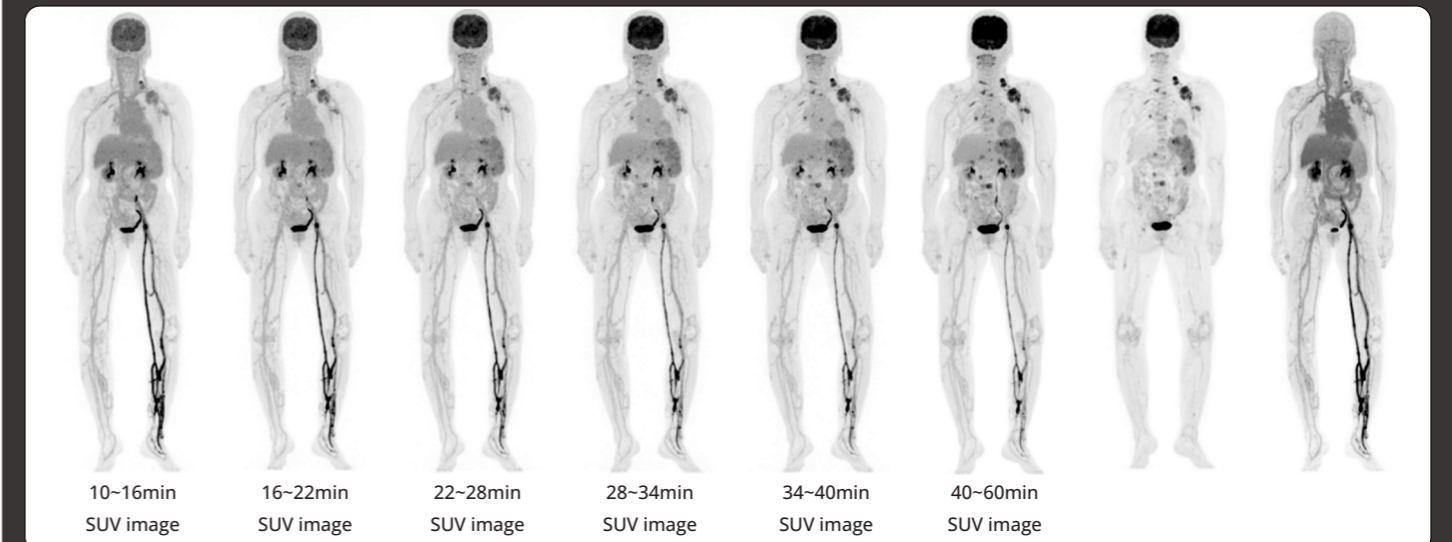
¹⁸F-FDG, 267 MBq, 15-min single-bed scanning, uExcel DPR
Images courtesy of the First Affiliated Hospital of Guangzhou Medical University, GD, CHN

High-quality motion-corrected cardiac imaging



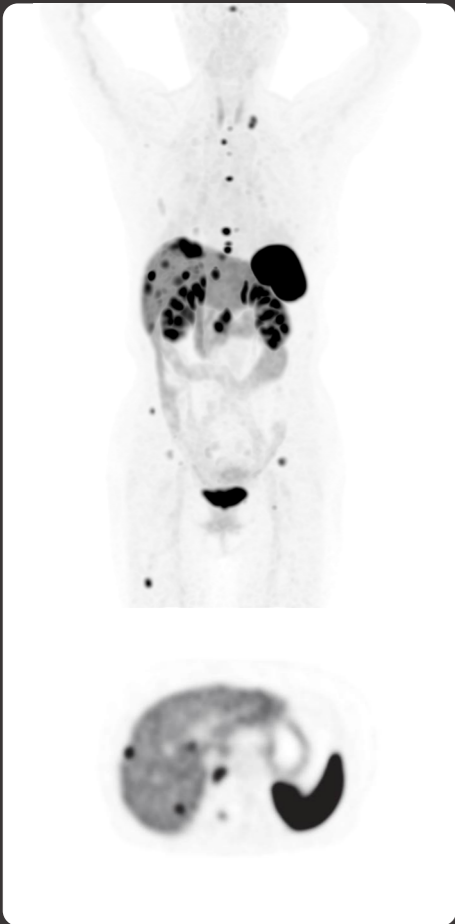
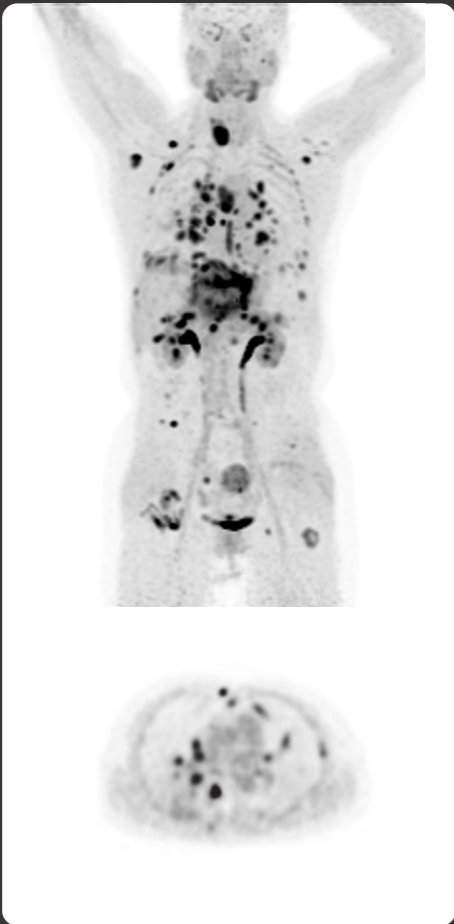
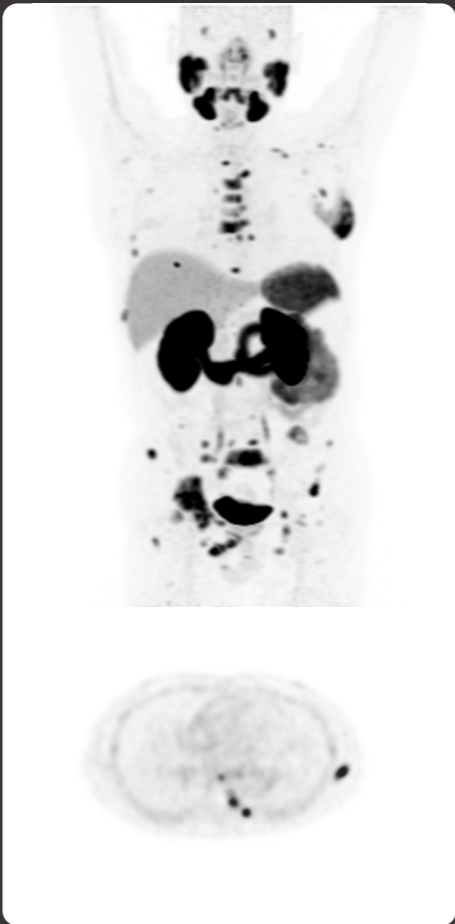


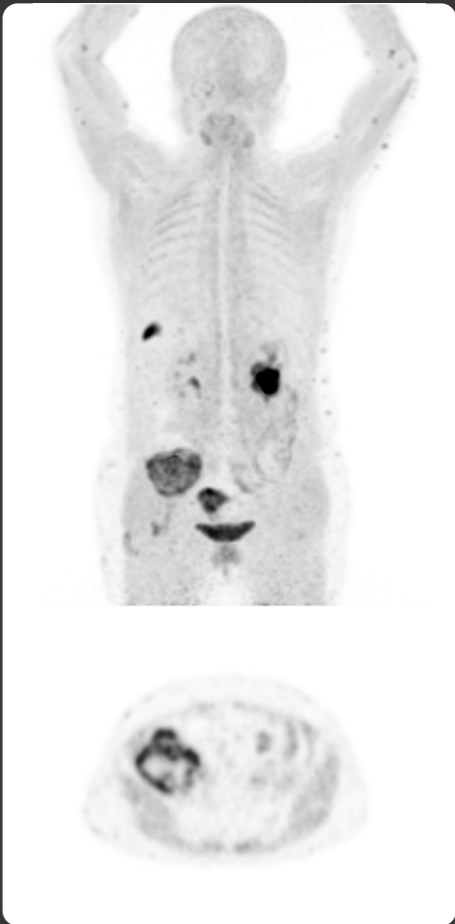
¹⁸F-FDG, 221 MBq, 6-min whole-body scanning, OncoFocus
Images courtesy of Xijing Hospital, SX, CHN

Total-body dynamic and parametric imaging



¹⁸F-FDG, 292 MBq, 50-s/bed and 5-min/pass dynamic scanning
Images courtesy of Xijing Hospital, SX, CHN

Unlock New Potential of Multiple Tracers with Uncompromising Image Quality

⁶⁸ Ga-DOTA-NOC	⁶⁸ Ga-FAPI	⁶⁸ Ga-PSMA	⁶⁸ Ga-CPCR4-2	¹⁸ F-PSMA	¹⁸ F-FAPI
					
⁶⁸ Ga-DOTA-NOC, 1.79 MBq/kg 6-min whole-body scanning, OSEM**	⁶⁸ Ga-FAPI, 1.25 MBq/kg 8-min whole-body scanning, OSEM**	⁶⁸ Ga-PSMA, 1.90 MBq/kg 8-min whole-body scanning, OSEM**	⁶⁸ Ga-CPCR4-2, 1.92 MBq/kg 8-min whole-body scanning, OSEM**	¹⁸ F-PSMA, 1.78 MBq/kg 3-min whole-body scanning, OSEM**	¹⁸ F-FAPI, 1.21 MBq/kg 3-min whole-body scanning, OSEM**
** Images courtesy of Xijing Hospital, SX, CHN *** Images courtesy of the First Affiliated Hospital of Guangzhou Medical University, GD, CHN					

uMI Panorama

uExcel
uVision
with 3D Camera
for precise patient positioning

Ultra Digital Platform PET detector

2.76 mm ultra-fine LYSO crystal size and
189 ps ultra-fast TOF performance

76 cm Gantry bore size

with accommodation for patients of various
sizes and compatibility with third-party
respiratory gating devices

60 kVp Ultra-low CT tube voltage

4 cm CT detector coverage

0.5 mm × 80 rows with 3D collimator grid
up to 160 slices/rotation

28 cm, 35 cm, etc. Scalable PET axial FOV

0.25 s Rotation speed

318 kg (700 lb) Table load capacity

300 kg (661 lb) with flat table top**

Offering comprehensive software and hardware solutions, a brand-new AI-driven imaging workflow, and future-forward scalability, uMI Panorama is a powerful platform designed to meet your next-generation PET/CT imaging needs.

uExcel Focus Whole-body motion management suite

for better PET image reproducibility and reliability

OncoFocus*

AI-based respiratory motion correction

NeuroFocus*

Intelligent head motion correction

uExcel CARE AI-based image optimization engine

for PET-CT dual-model scanning acceleration, dose saving, and image-quality improvement

DPR

PET deep progressive reconstruction

AIIR*

CT deep iterative reconstruction

Advanced CT Applications

AI-driven dose modulation

with Auto ALARA kVp, Auto ALARA mA, and more

Precise cardiac imaging

with CardioXphase, CardioCapture, CardioAssist, and more

Radiotherapy simulation positioning*

with Retrospective 4D CT Scan, 4D CT Review, and more

User in Mind Design

Focusing on user experience, uMI Panorama combines accurate operation with a lightweight and artistic design. We bring aesthetic enjoyment and ease of use to the technology, delivering care, trust and respect through our design.



Pleasing Aesthetics

Our design scheme integrates oriental aesthetics with minimalism, presenting a seamless fusion of traditional and modern styling.



Ergonomic Innovation

The product design delivers comfort, safety, efficiency and ease-of-use. By applying ergonomic principles, uMI Panorama combines innovative design with optimal functionality in order to provide a better possible user experience, optimizing patient comfort during the examination.



Sophisticated Craftsmanship

Driven by the tenets of precision design, we fine tune every technological detail to embody the spirit of craftsmanship in every product.

References

[1] Based on measurements available at time of publication. Data on file.

[2] Compared to current globally commercial PET/CT systems. Data on file.

[3] Gain is calculated for a 20-cm cylindrical phantom.

[4] Lu Y, Kang F, Zhang D, et al. Deep learning-aided respiratory motion compensation in PET/CT: addressing motion induced resolution loss, attenuation correction artifacts and PET-CT misalignment. *Eur J Nucl Med Mol Imaging* (2024).
<https://doi.org/10.1007/s00259-024-06872-x>

[5] Kang F, Xie Z, Ma W et al. Validation and evaluation of a vendor-provided head motion correction algorithm on the uMI Panorama PET/CT system. *J Nucl Med* (2024).
<https://doi.org/10.2967/jnumed.124.267446>

[6] Revilla E M, Gallezot J D, Naganawa M, et al. Adaptive data-driven motion detection and optimized correction for brain PET. *Neuroimage* (2022).
<https://doi.org/10.1016/j.neuroimage.2022.119031>

[7] Wang T, Qiao W, Wang Y, et al. Deep progressive learning achieves whole-body low-dose ¹⁸F-FDG PET imaging. *EJNMMI Phys* (2022).
<https://doi.org/10.1186/s40658-022-00508-5>

[8] Measured according to NEMA NU 2-2018.

[9] Measured with TOF Gain on uMI Panorama 35.

Reproduction and onscreen display may result in a certain degree of image-quality degradation.

United Imaging does not make any claims regarding the safety and effectiveness of tracers that have not been approved by the FDA or CE.

The statements provided by United Imaging customers in this document are based on the unique outcomes achieved within their specific settings. Due to the absence of a "typical" hospital or laboratory

and the presence of numerous variables (such as hospital size, sample composition, case mix, level of IT infrastructure, and/or adoption of automation), it cannot be guaranteed that other customers will attain the same results.

The commercial availability of uMI Panorama may vary across countries and its future accessibility cannot be guaranteed. For further details, please contact your local United Imaging organization.