



DISCOVERY MI







Introducing Discovery MI

MEANINGFUL INSIGHTS.
FROM YOUR PATIENT
TO EVERY PATIENT.

Meet Discovery™ MI. A PET/CT system conceptualized with lofty goals, equal only to your own. It was created to help you diagnose and stage disease earlier and better guide your treatment strategies. It was designed with the hope you can conduct more compelling research more often with more novel, faster decaying tracers; permitting you to push the boundaries of PET. And it was built with capabilities aimed to more economically support increased patient volumes so your facility doesn't need to sacrifice advanced clinical work to accelerate its research initiatives.

We understand these are the types of outcomes you want to achieve. Discovery MI was engineered to help you get there. By delivering what you need for meaningful insights, we look forward to your next true discovery - something we all need.

**Optical cover and
EMC shielding**

Light-tight packaging
reducing outside noise

**ESR wrapped
crystal block**

Optimizes light collection
improving sensitivity and
resolution

SiPM array with ASIC

Excellent timing and energy
resolutions

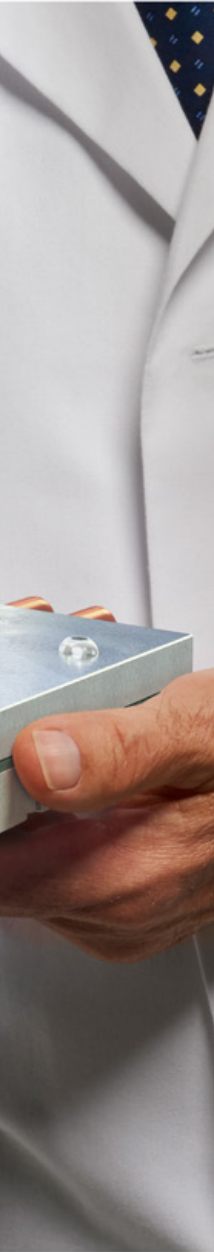
Digital Compton Recovery
with no resolution trade-off

**High thermal
conductive pads**

Extracts heat from the
detector improving stability

**Mechanical support
for positioning and
alignment**





Technology

ENGINEERED FOR PRECISION

Our vision for the future of PET is completely digital. A digital experience is what will connect all the important technologies, data, insights and people together to make PET an indispensable tool.

The LightBurst Digital Detector combines a small lutetium-based scintillator crystal array with a Silicon Photomultiplier (SiPM) bloc design for high NEMA sensitivity of 13.5 cps/kBq and a large 20 cm extended axial FOV. It delivers significant improvements over TOF-analog technology in scan times, required dose levels and small lesion detectability¹. And Discovery MI is the only PET/CT system that brings together the sensitivity of digital detection with the most innovative reconstruction technology available, the combination of Time-of-Flight and Q.Clear.

Discovery MI includes diagnostic CT innovations from our Revolution™ EVO. It combines the Clarity Imaging System with the speed of the Performix™ 40 Plus tube with our proprietary HiLight CT detector to deliver up to a 2x increase in spatial resolution². Our innovative ASiR-V™ iterative reconstruction method comes standard to reduce CT dose^{2,3}. And Smart MAR virtually eliminates streaks and shadows from metal artifacts.

A BRILLIANT INTRODUCTION TO ALL THAT DISCOVERY MI CAN DO

2x

Up to 2x improvement in volumetric resolution¹

50%
REDUCTION

Half the time, or half the dose⁴



Highest NEMA sensitivity of any TOF PET/CT system



Significantly better small lesion detectability¹



Highest NECR⁵ of any TOF PET/CT system

82%
REDUCTION

Up to 82 percent reduction in CT dose with ASiR-V, at the same image quality^{2,3}

100%
INCREASE

100 percent better spatial resolution, with no increase in image noise with ASiR-V²



Quantitation

ACCURATE RESULTS START WITH THE LETTER “Q”

Quantitation helped establish PET/CT as a valuable clinical tool. It provided an important starting point to find and follow disease throughout the course of treatment, but it was limited by the technologies used to produce it. Now, consistent, accurate SUV measurements are possible with Q.SUV. The ‘Q’ is important. It signifies the SUV measurement was produced exclusively from our innovative PET image reconstruction technology, Q.Clear, which delivers not only up to a 2x improvement in PET quantitation accuracy (SUV_{mean}), but also up to a 2x improvement in image quality (SNR). For this reason, Q.Clear is a critical component of Discovery MI.

Q.SUV is more than a starting point for clinical decisions. Because it is more accurate and consistent than conventional methods, it becomes more than a number, it becomes a tool for communication. As a result, it sharpens communication between radiologists, oncologists and patients. Be sure your SUV starts with a ‘Q’.

QUANTITATIVE SUV YOU AND YOUR PATIENTS CAN TRUST



Grow patient volumes as referring physicians value the accurate, reproducible results and diagnostic confidence you deliver



More accurately assess treatment response to guide your treatment planning decisions with more accurate SUVs



Improve communication with improved quantitation

Capability

IMPACT ONE LIFE AT A TIME WHILE WORKING TO CHANGE EVERY LIFE FOR THE BETTER



Your work is multifaceted. Not only do you work every day to impact the lives of your patients for the better, you are looking for insights that will have a greater impact on the lives of every patient. You may be correcting the course of treatment for a cancer patient one day and looking for a new clinical indication for a high count-rate tracer the next. We understand. It's why, after collaborating with leading clinicians and institutions across the globe, we designed Discovery MI to give you the flexibility to balance the quest for true discoveries with great clinical work.

Perform advanced diagnostic scans with FDG, or pursue groundbreaking research with faster decaying tracers. Enhance your clinical excellence in oncology, or expand PET's impact on neurology and cardiology and beyond. Discovery MI was designed with the breakthrough technology and advanced quantitative software you need to answer the simple question of, "What if?"

What if you had a PET/CT system with enhanced capability? The capability to evaluate the patients you see today and explore your vision for what PET/CT can be tomorrow.

CLINICAL WORK THAT EXCELS BEYOND WHAT YOU THOUGHT WAS POSSIBLE



Continue your efforts to **diagnose and stage disease earlier** with technology that detects smaller lesions¹



Increase the number of successful CT scans of patients with metal implants, with Smart MAR



Expand your diagnostic service offerings



Enhance utilization of limited-access tracers, such as ⁶⁸Ga, with the highest NEMA sensitivity of any TOF PET/CT system



Provide a more comfortable patient experience with short scan times



THE OPPORTUNITY TO INFLUENCE THE FUTURE OF MEDICINE



Conduct more compelling research, such as quantitative brain studies, facilitated by an expanded FOV



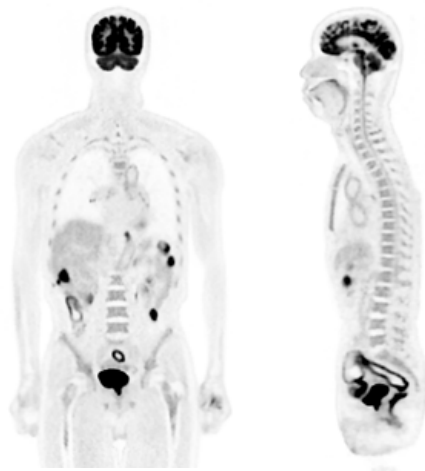
Pursue improvement of PET/CT practice guidelines to better reflect capabilities in imaging small nodules



Explore PET capabilities in cardiac imaging, leveraging high sensitivity and small lesion detectability¹

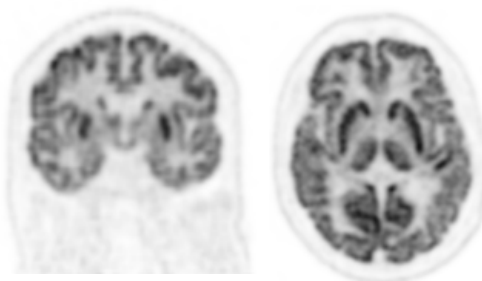


Increase low-yield tracer capability with protocols that reduce dose by up to 50 percent without impacting image quality and small lesion detectability¹



High resolution whole body ¹⁸F-FDG scan demonstrating exceptional resolution in the spine and high image quality and lesion conspicuity in the right lung, enabling high diagnostic confidence in your PET/CT images.

Data acquired on an equivalent technology - SIGNA™ PET/MR.



High resolution brain image demonstrating clear differentiation of grey and white matter, as well as separation of gyri and sulci, to aid in diagnosis of neurological disorders such as epilepsy foci, dementia and metastatic disease.

Data acquired on an equivalent technology - SIGNA PET/MR.



A PET/CT SYSTEM FOR TRUE DISCOVERY

It takes a certain kind of mind to go in search of true discovery. A thoughtful mind. A mind like your own that looks for a way to have a lasting impact on the world around them. You, like us, dream of helping to change patient lives for the better and influencing the future of medicine. To push the boundaries of medicine beyond its daily practice.

Our purpose is to provide you with the important instruments you need. It's why we built Discovery MI. We see it as much more than a new imaging product. We see it as a result of our partnership that empowers your goal of forming new pathways to the future of medicine.





¹ Improved detectability as demonstrated in phantom testing.

² In clinical practice, the use of ASiR-V may reduce CT patient dose depending on the clinical task, patient size, anatomical location, and clinical practice. A consultation with a radiologist and a physicist should be made to determine the appropriate dose to obtain diagnostic image quality for the particular clinical task. Low Contrast Detectability (LCD), Image Noise, Spatial Resolution and Artifact were assessed using reference factory protocols comparing ASiR-V and FBP. The LCD measured in 0.625 mm slices and tested for both head and body modes using the MITA CT IQ Phantom (CCT183, The Phantom Laboratory), using model observer method.

³ Image quality as defined by low contrast detectability.

⁴ Compared to Discovery PET/CT 710.

⁵ Up to 20 kBq/ml.

Imagination at work

Product may not be available in all countries and regions.
Full product technical specification is available upon request.
Contact a GE Healthcare Representative for more information.
Please visit www.gehealthcare.com/promotional-locations.

Data subject to change.

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