Clinical versatility in all applications

Philips Panorama HFO Magnetic Resonance System
High Field Performance
The vertical field design in combination with dedicated Solenoid Technology (ST) RF coils offers image quality comparable to cylindrical 1.5T systems. ST coils are specifically designed for vertical field systems. Due to their intrinsically higher electromagnetic efficiency, ST coils provide up to 50% more SNR and larger coverage than traditional phased array coils.

Preferred by patients
The panoramic viewing angle of almost 360° and the spacious 160 cm-wide patient aperture of the Panorama HFO can put your patients at ease and provide a comfortable MR experience for even frail, anxious, elderly and claustrophobic patients.

Value for your practice
The combination of a large and wide-open patient aperture, isocentric imaging and a 45 cm FOV offers capabilities, such as kinematic joint studies, fat suppression in all areas and the ability to perform interventions. On top of that, the ST integrated body coil offers the opportunity to scan challenging patients without using surface coils. This makes the Panorama an extremely accommodating MR scanner for your patients, from small children to very large adults.
3D PCA with low VENC to visualize intra-cranial veins

CENTRA provides excellent depiction of the arterial phase; image left shows zoomed detail of right carotid artery.

High resolution MRA, accurate timing with BolusTrak

3D MRA (left) and Black Blood (right) of the aortic arch

MobiFlex, peripheral MRA

TRANCE, MRA of the peripheral vasculature

Angio

Fast high-resolution imaging for vascular exams with or without contrast agent.

- 3D MRA protocols for peripheral, whole body MRA.
- CENTRA to allow increased spatial resolution without venous contamination.
- 3D non-contrast MRA with cardiac triggering with TRANCE.
- MIP, MPR and 3D surface rendering.
- Automatic subtraction of pre- and post-contrast measurements.
- High resolution dynamic angiography studies with 4D-TRAK, faster than traditional methods.
**Bariatric**

Large patients - great images. The ST coils designed specifically for high efficiency in vertical fields are ideal for imaging large patients.

- All anatomies imaged at the isocenter.
- The patient remains in a comfortable position.
- Ample space for imaging of joints in various positions as well as dynamic studies.
- High homogeneity across the 45 cm FOV ensures excellent fat-saturation imaging.
- High field quality, more comfort, more coverage.

3D WATSc acquisition for cartilage visualization

CLEAR provides homogenous signal throughout the image

Large Field of View Cardiac cine imaging with B-TFE

Homogenous fat suppression due to iso-center positioning

The ST Neck coil provides good SNR in a comfortable design

ST coil design provides good signal to noise in even more challenging patients
**Body**

Fast, high-resolution scan methods for body imaging, including oncology applications.

- In and out of phase breathhold FFE and TFE. TFE for fast T1-weighted imaging.
- e-THRIVE compatible with either SPIR or SPAIR fat suppression, allows for choice between high-resolution and/or improved isotropic acquisitions in a single breathhold.
- MRCP/U sequences acquired by SSH, radial SSH and 3D acquisitions for high-resolution imaging with or without triggering or breathhold imaging.
- Whole Body imaging combining imaging sequences for up to 20 stations supporting whole body oncology, angiography and DWIBS.
- MotionTrak Body providing respiratory navigators designed for all Body applications.
- DWI single shot EPI diffusion weighted sequences with three diffusion directions and up to 16 b-values per scan.
- Mobiview enabling automatic, single mouse-click composition of data sets from multi-station acquisitions.

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**e-THRIVE dynamic liver imaging in a 16 second breath hold. Arterial, venous and late phase shown**

**Single breath hold dual FFE, out- and in-phase TE**

**Diffusion Weighted Imaging of the liver in 20 seconds**

**Free-breathing T2W TSE of the upper abdomen**

**Free-breathing T2W SPIR, excellent fat suppression**

**T1W Whole Body imaging**

**3D MIPCR, MIP projection**

**B-TFE, non contrast MRA**

**High resolution, thin slice T2W TSE**
Cardiac imaging methods for studies of the heart and surrounding vessels.

- 2D/3D balanced FFE provides high SNR and optimal myocardium-to-blood contrast for (functional) cardiac studies.
- ECG-triggered 2D/3D balanced FFE for high SNR and excellent myocardium-to-blood contrast for cardiac function.
- Robust ECG gating using Vector Cardiogram Gating with 4 ECG leads.
- BLACK BLOOD for dark blood prepulses for TFE, TFE-EPI and TSE in combination ECG triggering.
- k-t BLAST provides up to a five-fold acceleration of scan time.
- Real-time interactive imaging enabling planning of any cardiac view in real time by changing the geometry and contrast parameters during scanning.

Coronary artery imaging with MotionTrak navigator

Balanced TFE cine imaging showing 4 chamber and long axis view

Multi-slice (9), multi-phase (25) cine imaging for left ventricle analysis

Quantitative Flow analysis

Valve assessment with multi-phase balanced TFE

TIW SPAIR Black Blood imaging, Triple Inversion Recovery

TIW Black Blood imaging, Dual Inversion Recovery
Open design provides space for dynamic imaging of joints in different positions.

Proton density SPIR fat suppression

High resolution Proton Density with asymmetric TSE

T2W TSE with SPAIR fat suppression

Easy access allows needle positioning for arthrography

Thin slice (2.5 mm) T1W TSE providing high detail

T1W imaging of the hip

STIR and T1W imaging of the foot in the ST SENSE Head coil

Iso-center imaging combines patient comfort with excellent image quality

MSK

High-resolution and fast orthopedic imaging supporting assessment of morphology in the spine and extremities.

- Spectral Presaturation Inversion Recovery (SPIR) for fat suppression.
- Short T1 Inversion recovery (STIR) for fat suppression.
- Turbo-STIR for fat-suppressed evaluation of bone bruises.
- SPAIR fat suppression, a high uniformity fat saturation method characterized by low sensitivity to B1 inhomogeneities.
- Asymmetric TSE for selection of TE in a fixed shot length, enabling high-resolution imaging and extended contrast control for TSE acquisitions in short scan times.
- m-FFE combining echoes for all 2D and 3D gradient echo sequences.
- Advanced MSK for T2/T2* mapping and high resolution, isotropic acquisition.
- SmartExam Knee and SmartExam Shoulder enabling automatic planning of knee and shoulder applications.
Neuro
High-quality, high-resolution neuro imaging functionality for the assessment of morphology in the brain. Offering workflow assistance and high-end neuro methodologies.

- SmartExam Brain and Spine for reproducible, consistent clinical results.
- SPAIR (Fluid Attenuated Inversion Recovery) for fluid suppression.
- MULTIVANE motion correction allowing acquisition of high-resolution diagnostic images in cases of severe patient motion.
- 3D TFE enabling isotropic coverage of the entire head.
- Diffusion Weighted Imaging and ADC maps for brain.
- Multi-directional DTI imaging sequences.
- 2D color cross sections with fiber tracts.

3D T1W FFE, isotropic resolution of 1.0mm. Sagittal source slices left, coronal and axial MPR’s to the right.

SENSE reduces susceptibility artifacts on Diffusion imaging. Left: Isotropic and right: ADC image.

High resolution T1W imaging of the pituitary.

Robust fat suppression with SPAIR TSE in the challenging region of the orbits.

Snapshot imaging helps in imaging restless patients. Left: normal TSE, right: Snapshot TSE.

Large Field of View, high resolution with the ST Neck coil.

DWBIS, Diffusion Weighted Imaging with Background Suppression.

FA color maps of Diffusion Tensor scan with 16 diffusion directions.
High resolution T2W TSE on 1 year old

Snapshot T2W TSE, 29 slices in 24 seconds. Ideal for imaging less co-operative patients

Fetal imaging requires speed. Balanced TFE 1 second per slice

Pediatric abdominal MRI, T2W TSE acquired in free-breathing

Imaging the small vessels of a 1 year old with high resolution Time of Flight

Fast imaging. The TSE in 1.49 minutes on wrist of 8 year old

Pediatric

Dedicated pediatric coils, accessories and Examcards allowing fast and robust pediatric imaging.

- The friendly and open design of the Panorama HFO puts the young patients at ease.
- Patient centric design begins with knowing the patient. With Ambient Experience you can personalize light, music and visual displays for every patient.
- A dedicated cradle for newborns allowing preparation of the patient away from the magnet.
- The soft mattress raises small patients into the isocenter of the magnet, giving high image quality with excellent comfort.
- Dedicated peripheral pulse sensors can be positioned on finger, hand or foot.
Spine

Comprehensive spine imaging with free positioning for a comfortable exam.

• T2W TSE with SPAIR.
• VISTA to acquire high-resolution 3D T2-weighted images acquired with a TSE acquisition. Acquisition time and inter-echo spacing are optimized through the applications of flip angle sweep in combination with non-selective refocusing pulses.
• VISTA in combination with MPR processing of spine images.
• Mobiview enabling automatic, single mouse-click composition of data sets from multi-station acquisitions into full FOV images.

Visualization of nerve roots with 3D thin slice (1.2 mm) Balanced TFE

Dynamic imaging of the cervical spine. From flexion to de-flexion

High resolution Proton Density weighted TSE (upper image) and T2W TSE (lower image)

Mobiview merges 3 station T1W total spine images into one complete view

T1W and T2W TSE on a patient with metal implants in the spine

48 second myelogram

Large Field of View 5TR Thoracic spine imaging
ST Breast 8 ch coil provides high SNR and SENSE parallel imaging. T2W SPAIR (left), e-THRIVE (right).

High resolution coronal T2W TSE with ST Breast 8 ch coil

Real-time imaging during positioning of guide wire.

High resolution T2W TSE with SENSE

BLISS, Bilateral sagittal high resolution T1W imaging with fat suppression

High resolution pelvic imaging, T2W TSE with 4 mm slices

Womens Health

High-spatial and/or temporal resolution breast imaging.

• e-THRIVE, compatible with either SPIR or SPAIR fat suppression, high-resolution T1 and T2 TSE sequences compatible with SENSE for fast high-resolution scanning.
• Silicone only sequences optimized for breast implants.
• Open design ST SENSE Breast coil with breast immobilization system and biopsy possibilities.
Panorama HFO
ST Coils

The Panorama HFO, our high field, wide open system, offers outstanding clinical versatility with leading solutions for all clinical applications. And it’s preferred by patients because of its comfortable space and wide open bore. It offers exceptional economic advantages too, in installation, operational and environmental costs. Since the first release, we’ve regularly extended its capabilities with additional coils, new gradients, software releases and a new oncology configuration.

- Solenoid Technology (ST) Coils excel in SNR and homogeneity enhancing image quality.
- SmartExam brings fully automated planning with a single mouse click for 70% of your daily caseload which supports productivity and efficiency.
- Advanced functionality: SENSE acceleration, fast MR Angio with 4D-TRAK, fast cardiac imaging with k-t BLAST, high-resolution imaging (2K).
- Stressed and claustrophobic patients, children, elderly and large patients will appreciate the 330-degree viewing angle and 160 cm-wide patient aperture.
- Whole Body imaging for Oncology with high-sensitivity integrated body coil, accelerating patient preparation with excellent patient comfort. Includes DWIBS imaging.
- Lightweight magnet design allows easy, cost-effective siting without need for additional reinforcement.
- PowerSave technology keeps energy consumption and air-conditioning to a minimum.
- Panorama HFO user community sharing clinical knowledge and experience through NetForum and dedicated publications.
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