

**SPESIFIKASI PHILIPS MRI Ingenia 3T**

**I DATA ADMINISTRASI**

JENIS PRODUK	: Imaging System
NAMA PRODUK	: MRI (Magnetic Resonance Imaging)
MODEL/TIPE PRODUK	: PHILIPS Ingenia 3T
NO. REGISTRASI DAN MASA BERLAKU	: KEMENKES RI AKL 21501211084
NAMA SOLE AGENT	: PT. PHILIPS INDONESIA COMMERCIAL
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	: Veenpluis 4-6 5684 PC BEST, NETHERLANDS

**II DATA SPESIFIKASI**

INFORMASI PRODUK	PRODUK
COUNTRY OF ORIGIN	Netherlands
FACTORY OF ORIGIN	Netherlands
PRODUCT'S REGISTRATION (AKL/AKD)	<b>KEMENKES RI AKL 21501211084</b>
<b>REFERENCE OF TECHNICAL</b>	
<b>MAGNET</b>	
Magnet strength	3 T
Helium boil-off rate	0 L / year
Diameter lubang magnet	70 cm
Magnet Length	1.62 m
Magnet Shielding	Active self-shielding
External Interference Shielding	Yes
Type of shimming	Passive + Active (Dynamic)
Patient specific shimming	3D Volume Shim
2nd order shimming	3x linear + 5x second order
Type Magnet	Superconductor
RF Receive	DirectDigital technology that samples the MR signal directly in the RF coil on the patient. The fiber-optic transmission of digital broadband data from the coil to the image reconstructor removes potential noise influences typical with analog pathways.
RF Transmit	Desain RF transmit with multiple RF sources.
Type Pendingin	Helium
Maksimum FOV in X & Y directions	55 cm
Number of receive channels	Independent Channel / digital broadband system
<b>GRADIENT</b>	
Gradient Amplitude	45 mT/m
Gradient Slew Rate	200 T/m/s
<b>COIL</b>	
Integrated coil solution for head, neck and total neuro related imaging	Head Neck Coil
32-channel coil designed for advanced neuro applications including fMRI, Spectroscopy, Angiography	Head Coil 32Ch
Integrated coil solution for thorax , abdomen and cardiac	Body Coil
Integrated coil solution for total spine related imaging	TotalSpine Coil
Integrated coil solution for general-purpose imaging ; small joint, small part of body	Flexible Coil Medium
Ski-boot shaped coil for optimum coverage of the ankle and entire foot up to the toes	Foot/Ankle Coil
Coil designed for ultra-high SNR imaging over an extended field of view of the knee and other extremities	Knee Coil
Coil designed for high uniformity throughout the shoulder joint, with excellent penetration into the labrum	Shoulder Coil
The Breast coil is designed for optimal coverage of the axilla region and outstanding performance	Breast Coil
<b>PATIENT ENVIRONMENT</b>	
Choice of head-first or feet-first patient	Yes
Horizontal travel distance	275 cm
Accuracy	0.5 mm
Maximum weight capacity	250 kg
Minimum Table Height	59 cm
Patient communication	Two-way intercom communication with the patient

Acoustic noise reduction software	Autosoftone noise reduction up to 30 dB
Acoustic noise reduction hardware	Headset (up to 25 dB reduction)
	Acoustic damping of covers
Physiology measurement and gating	Force-balanced gradient coil with flexible mounting
	Physiological synchronization for sequence triggering and gating through: - Wireless VCG - Wireless Respiratory - Wireless PPU
Patient transport solution	Dockable patient transport system for simplified patient preparation, handling and transportation from preparation room to the MR scanner, without repositioning the patient.
Coil Storage	Coil storage cart which stores dStream coils and accessories to enhance workflow for a large range of clinical applications.
Ambient Lighting MR system	Ambient Lighting for MR combines Ambient Experience design strategies and dynamic, LED colored lighting to enhance the clinical space. The solution begins with site-specific recommendations to optimize the clinical area in terms of workflow and storage, including opportunities to minimize clutter for a more soothing environment.
<b>SOFTWARE CAPABILITIES on SCANNER</b>	
<b>AutoVoice</b>	With AutoVoice the patient is guided through the MR examination with voice audio information to the patient on length of scan, breath hold and table movement. Multiple languages can be selected. Includes a recording option for specific commands or languages
<b>ComforTone</b>	ComforTone is a scan technique that brings noise reduction. ComforTone ExamCards will be available for routine exams (Brain, Spine, MSK) including the reference scans
<b>ScanWise Implant</b>	ScanWise Implant is a user interface with guidance that simplifies scanning patient with MR Conditional implants. It allows you to enter the implant's MR Conditional values only once and as specified by the implant manufacturer. It will automatically adjust all scan and pre-scan parameters to meet the implant conditional values entered by the operator. ScanWise implant makes your MR scanner adhere to the entered implant conditions throughout the whole examination
<b>MultiVaneXD</b>	MultiVane XD is an enhanced Multivane technique for Multi-slice TSE and for Multi-slice FFE techniques, suitable for all anatomies. It provides an enhanced Multivane motion control algorithm especially suited for gross motion. Combinable with SENSE parallel imaging in any direction allowing for short scantimes.
<b>Neuro Imaging :</b>	
Sequences include SE, FFE and EPI based methods, with fat suppression methods including STIR, SPIR, ProSet and SPAIR	Yes
FLAIR for CSF suppression.	Yes
Snapshot imaging, intended for uncooperative patients, eliminates the effects of patient and physiological motion through the combination of rapid TSE sequences and SENSE. Individual Snapshot images can be acquired in any orientation in approximately 250ms to 300ms. Asymmetric TSE makes Snapshot compatible with T1-, T2- and diffusion-weighted imaging	Yes
Single, Dual and Triple IR sequences for evaluation of gray and white matter differentiation.	Yes
2D TSE with Flip Angle Sweep technology for SAR and Magnetization Transfer reduction, improving gray/white matter contrast in both T2 and FLAIR acquisitions.	Yes
3D based anatomical sequences including	Yes
VISTA, isotropic 3D TSE for volumetric acquisitions with reconstruction in any plane	Yes
3D T1-TFE sequences for volumetric acquisition and reconstruction of the original dataset in any orientation	Yes
3D TFE for isotropic coverage of the entire head in short scantimes using SENSE. A single data set can be reformatted into alternate planes both pre- and post-contrast, eliminating the need for additional scans	Yes
DRIVE for T2-weighted 2D and 3D TSE acquisitions enabling short TRs while maintaining contrast-to-noise and SNR. Used to improve fluid visualization (IAC), for short scan times and to increase resolution	Yes
Balanced FFE/TFE for high-resolution high contrast (IAC and Spine applications).	Yes
ProSet water and fat excitation for spinal nerve root imaging. Combines the characteristics of the high-resolution volume acquisitions with ProSet water or fat only selection	Yes
Multiple radial projection myelography both with 2D and 3D sequences	Yes

MultiVane to correct motion for multi-shot TSE examinations with radial encoding. MultiVane delivers high resolution diagnostic images even in case of patient motion for T2, IR-real & FLAIR TSE imaging as well as gradient-echo examinations.	Yes
Dynamic multi-slice T2*-weighted sequences based on single- or multi-shot FFE-EPI methods for perfusion and fMRI sequences	Yes
Single-shot EPI diffusion-weighted imaging (DWI) with three diffusion directions and up to 16 b-values, robust against motion and generating isotropic DWI images.	Yes
BolusTrak enables accurate synchronization of high-resolution CE-MRA acquisitions. BolusTrak uses a real-time fluoroscopic display of bolus arrival in the area of interest and manual start of the target acquisition. BolusTrak in combination with CENTRA minimizes venous contamination and produces optimal arterial vessel contrast and resolution.	Yes
TRACS enables accelerated time-resolved contrast-enhanced vascular imaging. TRACS uses SENSE for image acceleration and CENTRA phase-encode ordering for optimized contrast.	Yes
m-FFE provides unique image contrast - ranging from 2D or 3D gradient-echo sequences to the combination of echoes.	Yes
Venous BOLD provides T2*-weighted 3D sequences compatible with SENSE. These sequences are useful for evaluating various brain anomalies associated with venous blood.	Yes
Phase contrast (PC) sensitive imaging for the visualization of moving fluids	Yes
MobiFlex and MobiView, compatible with all sequences, for easy Total Spine imaging	Yes
T2* perfusion analysis	Yes
Diffusion imaging processing with automatic generation of the ADC maps	Yes
Perfusion tools package, enabling	Yes
Dynamic multi-slice T2*-weighted sequences based on single- or multi-shot FFE or FFE EPI methods, including the PRESTO technique	Yes
Processing and calculation of T1 and T2* hemodynamic maps including Mean Transit Time (MTT), Time to Peak (TTP), Time of Arrival (T0), Negative Integral (NI), Index or upslope. All post-processing can be included as an in-line step within Examcard	Yes
Prospective Motion Correction: accounts for subject motion by real time monitoring of motion during acquisition and adjustment of acquisition parameters accordingly. PMC enables overall improvements in image registration	Yes
3D PRESTO	Yes
Whole brain coverage and high temporal-resolution T2*-weighted imaging for perfusion-weighted and BOLD imaging studies	Yes
Higher temporal resolution and coverage compared to traditional multi-slice techniques.	Yes
Reduce sensitivity to susceptibility and flow artifacts associated with EPI techniques, enabling imaging throughout the brain and into the skull base.	Yes
SmartExam Spine provides automated numbering of the vertebrae. A unique snapping mechanism allows easy definition of the precise levels for transverse stacks. Dragging a stack from one level to another results in stack snapping precisely to the new disc level. These SmartExam Spine features make it easy to use while providing consistent and reproducible MR exams. SmartExam seamlessly integrates with ExamCards, enabling automatic planning, scanning and processing of complete patient studies with a single mouse-click. SmartExam ensures: <input type="checkbox"/> The patient will spend less time in the system. <input type="checkbox"/> The physician gets reproducible, consistent clinical results independent of operator. <input type="checkbox"/> The operator can focus on managing patient throughput. <input type="checkbox"/> The administrator gets increased efficiency and throughput and the practice becomes easier to staff and train.	Yes
BOLD Sequence and Analysis	Yes
Spectroscopy 2D, Multiple 2D and 3D Can be used for any anatomy and with any coil	Yes
Susceptibility Weighted Imaging	Yes
Diffusion Tensor Imaging	Yes
Tractography / Fibertrack	Yes
fMRI sequence and evaluation	Yes
Artery Spin Labelling Non contrast brain perfusion	Yes

Multi echo, multidelay brain images (MDME) in one acquisition. The sequence is based on a Turbo Spin Echo (TSE) or GraSE acquisition. (from SyntheticMRI), to derive synthetic brain images with specific weightings (T2, T1, FLAIR) and various parameter maps based on the single acquired data set. Dedicated protocols are delivered to ensure full utilization of the processing package.	Yes
MultiBand SENSE allows the user to accelerate fMRI or DTI (DWI) sequences in the brain by means of multi-band RF slice excitation and MB-SENSE decoding during reconstruction. MB SENSE delivers acceleration factors up to 8 for single-shot FFE-EPI (fMRI) sequences and up to 4 for single-shot diffusion weighted SE-EPI(DTI) sequences enabling higher temporal resolution in both type of acquisitions up to 70%. MB-SENSE is compatible with dS SENSE to shorten EPI trains and reduce distortions.	Yes
<b>MSK Imaging :</b>	
SE, TSE, and FFE sequences, with fat suppression provided by STIR, ProSet, SPIR and adjustable fat suppression with the SPAIR method.	Yes
Balanced acquisitions (bFFE) for high-resolution morphology scans	Yes
DRIVE combined with TSE to increase sensitivity to fluids (with good T2 weighting), even with short TRs	Yes
Turbo-STIR for fat-suppressed evaluation of bone bruises	Yes
TSE with asymmetric profile ordering for proton density weighted imaging of joints with higher spatial resolution or faster scan times	Yes
Mixed Mode (interleaved IR/SE for combined T1 & T2 map calculation).	Yes
Multi-Echo T2 measurements (up to 32 echoes) for T2 mapping	Yes
3D FFE with ProSet for water-only (selective excitation) sequences. Optimizes cartilage and/or fluid imaging with high-resolution in all directions.	Yes
e-THRIVE for 3D high-resolution fat-suppressed imaging for MR arthrograms and evaluation of soft tissue lesions as well as rheumatoid arthritis	Yes
MobiFlex for simple visualization of total spine imaging and multiple-station long bone studies	Yes
Dynamic imaging sequences for TMJ or other joint studies.	Yes
Includes protocols for imaging in the presence of prostheses, to improve susceptibility using SENSE, modifications of water-fat shift and user-specified bandwidth.	Yes
2K imaging offers a scan matrix of 2048 x 2048, providing high resolution even with large FOVs, or lower resolution scans with a 2048 matrix reconstruction. Compatible with all imaging methods	Yes
Soft tissue visualization in the vicinity of MR conditional orthopedic implants. Suitable for use on patients cleared for MR exams, it uses the latest acquisition and reconstruction techniques to help reduce susceptibility artifacts caused by metal. It employs MARS (Metal Artefact Reduction Sequences) high bandwidth TSE methods, VAT (View Angle Tilting) technology and SEMAC to reduce metal-induced distortions both in-plane and throughplane. For use with MR conditional orthopedic implants only.	Yes
User interface with guidance that simplifies scanning patient with MR Conditional implants. It allows you to enter the implant's MR Conditional values only once and as specified by the implant manufacturer. It will automatically adjust all scan and pre-scan parameters to meet the implant conditional values entered by the operator. ScanWise implant makes your MR scanner adhere to the entered implant conditions throughout the whole examination.	Yes
<b>Body Imaging :</b>	
TSE sequences with respiratory triggering (in combination with breath hold or free breathing).	Yes
MultiVane motion correction for T2w TSE diagnostic images, even in case of severe patient motion	Yes
In and out of phase FFE/TFE sequences	Yes
SPAIR for high uniformity fat saturation	Yes
e-THRIVE volumetric imaging with fat suppression, in short breath-hold times	Yes
Keyhole for high temporal dynamic imaging	Yes
Diffusion-weighted sequences with automated creation of Apparent Diffusion Coefficient (ADC) maps	Yes
MRCP sequences, (radial) single shot and 3D acquisitions	Yes
High-resolution pelvic imaging.	Yes
VISTA: isotropic 3D TSE pelvic imaging allowing volumetric acquisitions to be reconstructed in any plane.	Yes
MobiView and MobiFlex for automatic composition of data sets from multi-station acquisitions into full FOV images.	Yes

Dynamic scan techniques for monitoring and evaluation of contrast uptake viewing	Yes
High Resolution Diffusion / DWIBS package enables single or multi-station high resolution diffusion weighted imaging with background suppression. Patient and physiological motion is controlled by navigator-based motion correction.	Yes
MotionTrak Body includes a real-time respiratory navigator to synchronize data acquisition to the respiratory cycle of the patient. Options include: gating, tracking, gating & tracking, triggering, triggering & tracking. Tracking improves slice accuracy position over multiple breath hold sequences. Designed for all Body applications, including diffusion and DWIBS.	Yes
4D-THRIVE / BLISS is a time-resolved 3D technique to drastically accelerate dynamic body and breast imaging through the combination of a keyhole method with CENTRA and SENSE. Combines high spatial resolution with high temporal resolution to facilitate acquisition of multiple dynamic volumetric data sets per breath-hold.	Yes
Real-time respiratory navigator to synchronize data acquisition to the respiratory cycle of the patient.	Yes
Time-resolved 3D technique to drastically accelerate dynamic body imaging through the combination of a keyhole method.	Yes
Whole Body Specialist enables automated multi-station head-to-toe coverage.	Yes
<b>Breast Imaging :</b>	
SPAIR for high uniformity fat saturation	Yes
e-THRIVE for volumetric coverage with uniform fat suppression	Yes
BLISS, two bilateral sagittal volumes within a single acquisition	Yes
Diffusion-weighted sequences with automated creation of Apparent Diffusion Coefficient (ADC) maps.	Yes
Silicone-Only sequences optimized for breast implants	Yes
4D-THRIVE / BLISS is a time-resolved 3D technique to drastically accelerate dynamic body and breast imaging through the combination of a keyhole method with CENTRA and SENSE. Combines high spatial resolution with high temporal resolution to facilitate acquisition of multiple dynamic volumetric data sets per breath-hold.	Yes
Spectroscopy 2D, Multiple 2D and 3D Can be used for any anatomy and with any coil	Yes
<b>Cardiac Imaging :</b>	
Black blood prepulses to suppress blood signal for optimized myocardial and lumen visualization	Yes
Multi Slice / Multi Phase for function studies	Yes
Retrospective triggering with real-time prospective updating for full R-to-R coverage of function studies.	Yes
Temporal profile sharing for playback frame rates higher than acquisition frame rates	Yes
VCG gating for robust ECG gating and triggering (includes a four-lead cable set).	Yes
ECG-triggered STIR (inversion recovery TSE) including black blood imaging (triple IR	Yes
ECG-triggered Inversion Recovery (including PSIR) for myocardial tissue characterization	Yes
Non-invasive quantitative flow measurements of blood, including overlaid coloren-coded flow maps on the console	Yes
k-t BLAST provides up to five fold acceleration using an alternative parallel imaging technique employing undersampling in time and space. Suited for dynamic and realtime cardiac studies as well as single breath hold, multi-slice cine studies. Can be combined with most other imaging methods.	Yes
Cardiac MR functionality: <input type="checkbox"/> Acquisition of multi-slice, dynamic tissue studies with saturation prepulse (for T1 weighting). <input type="checkbox"/> WET saturation pulses (B1 insensitive) for uniform tissue suppression on 3.0T <input type="checkbox"/> Look Locker methods for determination of optimal inversion delay time. <input type="checkbox"/> Myocardial tagging with REST grids for regional wall motion studies. <input type="checkbox"/> Real-time interactive imaging.	Yes
<b>Vascular Imaging :</b>	
3D FFE sequences for contrast-enhanced MRA, including assessment of carotids, peripherals and renal arteries.	Yes
Quantitative flow with variable VENC values for non-invasive measurements of blood flow in three directions	Yes

2D/3D Balanced TFE/FFE for fast, high-resolution non-contrast enhanced vascular imaging.	Yes
Phase-Contrast Angio for imaging of brain vasculature	Yes
TRANCE for 3D high contrast TSE acquisitions without vascular contrast agents	Yes
Time-of-flight (inflow) sequences with TONE to improve contrast and MTC to reduce peri-orbital fat signal	Yes
CENTRA for 3D high-resolution contrast enhanced imaging to allow increased spatial resolution without venous contamination	Yes
Keyhole imaging to improve temporal resolution in dynamic studies	Yes
BolusTrak for synchronization of high-resolution CE-MRA acquisitions with a real-time fluoroscopic display of bolus arrival in the area of interest.	Yes
MobiView for automated composition of multi-station acquisitions (e.g. MRA runoffs) into single images.	Yes
MobiFlex for setup and acquisition of complex multi-station exams, combining different FOVs, resolution, geometries and SENSE acceleration factors	Yes
VCG gating for robust ECG gating and triggering (includes a four-lead cable set).	Yes
4D-TRAK is a scan method for fast, dynamic CE-MRA combining CENTRA, Keyhole and SENSE. Provides high spatial and temporal resolution simultaneously for a variety of CE-MRA applications, including evaluation of brain AVM, Subclavian Steal Syndrome, congenital heart disease or hemodialysis shunts. Can be combined with MobiFlex for direct visualization of dynamic peripheral vascular studies	Yes
<b>Onco Scanning</b>	
- Whole Body diffusion imaging for lesion detection with background suppression using high b-values	Yes
<b>Accessories &amp; Support</b>	
Workstation	Included
Service and Warranty	1 Tahun
On-Site training	3 kali (Basic, Intermediate & Advanced) @ 5 hari
RF Coil Cabinet	1 lemari nonmagnetic di dalam ruang magnet
Operator Console Table	Meja operator import
Patient observation camera (CCTV)	Kamera CCTV pasien dengan monitor di ruang operator
2 Set of Water Chillers	2 Set Chiller dengan tanki 1000 liter
RF Cage/Shielding	Termasuk Sangkar faraday
MR Injector	Injector Non magnetic
Dry Printer	Printer film 1 buah
Laser color printer for paper reporting	Disediakan
Audio System for patient convenience	Terkoneksi dengan system
Metal Detector	Handheld untuk screening sebelum masuk ruang magnet
Non Magnetic IV Pole	Infus stand non magnetic
Patient Monitor MR	Included