

100324 Achieva XR

System Type: New

Line #	Part #	Description	Qty	Each	Price
1	**NNAF379	Achieva XR Quasar 16 Channel	1		

System Overview

The unique Achieva XR is designed to meet the demanding criteria of today's progressive imaging centers, while offering an on-site upgrade to 3.0T without a change of magnet and associated down-time and costs involved. It offers new levels of software automation plus a new modular workspace environment to improve operational efficiency and workflow. The latest computing and hardware components ensure cutting edge acquisition speed, resolution and signal to noise. A combination of ScanTools and targeted optional Specialist Packages expand the range of leading clinical procedures available. Achieva XR delivers it all, packaged in an environment for optimized patient comfort. Altogether a powerful system that offers a unique pathway for growth today and expansion tomorrow.

The Achieva XR scanner comprises:

- XR Magnet: Achieva 3.0T magnet, ramped initially to 1.5T
- Patient environment
- High Performance gradient system
- FreeWave RF system

Achieva XR Magnet : Achieva 3.0T magnet, ramped initially to 1.5T

The Achieva XR features a next-generation revolutionary, ultra-compact, actively shielded, super-conducting magnet with large 50cm FOV capabilities. Through its use of Achieva 3.0T X-series technology in major subsystems (magnet, gradient), the system provides everything you need to deliver cutting-edge whole-body imaging. The magnet system includes

- Ultra compact patient friendly design - only 1.57m (5.15 ft) in length, ultra short 60cm tunnel length.
- Large FOV capabilities up to 50cm.
- High intrinsic homogeneity ensures excellent image quality over the full imaging FOV.
- A lightweight design of 4,600 kg (10,141lbs), a compact fringe field footprint (at 1.5T [axial x radial] 4.3 m x 2.7 m [14 ft.1in. x 8ft.10 in.] and at 3.0T 5.0m x 3.1m [16ft.5in. x 10ft.2in.]) and superconducting main field compensation that reduces susceptibility to field changes induced by moving ferrous objects, allow for maximum siting flexibility.
- Unique Achieva X-series zero boil-off technology for zero helium consumption under regular scanning conditions.

Patient environment

Achieva XR is specifically designed to enhance patient comfort and throughput by virtue of a spacious patient aperture that effectively eliminates claustrophobic effects and affords excellent patient access, provided by a combination of the shortest straight bore length in the industry and widely flaring bore. Achieva system's ultra-compact, patient-friendly environment also affords uncompromised large and offset FOV imaging. The High SNR body coil permits large FOV imaging without surface coils, reducing set-up time and facilitating easy run-off studies.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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Key features include:

Aperture:

- Bore diameter: 60 cm (23.6 in.)
- Straight bore length: 60 cm
- Bore flare: 110 cm (43 in.) on both the front and rear of the magnet, enabling equal access to the patient. Additionally, start/stop controls on both ends of the magnet increase operating flexibility.

Patient Support:

- Patient support enables patients weighing up to 250 kg (550 lbs) to be comfortably positioned.
- Patient table height can be lowered to 52 cm (20.4 in.), providing easy access for compromised or non-ambulatory patients.
- Detachable tabletop can be combined with optional trolley for efficient patient management and rapid evacuation.
- Horizontal travel of 215 cm (7.05 ft) with (1.0 mm (0.04 inch) accuracy
- Table speeds of 20 mm/s to 180 mm/s enable fast, easy patient positioning and rapid multi-station examinations.

Patient Accessories:

- Adjustable fresh air supply and variable lighting
- In-bore microphone and ceiling-mounted loudspeakers support two-way patient-operator communication and music.
- Hand-held technologist call button.
- Soft mattress with a headrest, knee support and positioning wedges.
- Patient headset with built-in two-way communication reduces acoustic noise by up to 25 dB.
- Wireless Physiology consisting of wireless Basic Triggering Unit (wBTU) and Respiratory module hardware
- Physiological synchronization for sequence triggering and gating is possible with
 - Wireless VCG
 - Wireless Respiratory
 - Wireless PPU (requires optional PPU Sensors)

Physiological signals can be observed on the operator's console monitor

Optional exam room displays include the Physiology Monitor (on the gantry) and the Interactive Exam Room Display.

Quasar gradient system

The exclusive X-series Quasar gradient system offers industry-leading performance with excellent linearity commensurate with a large 50cm FoV. The Quasar gradient system combines 40 mT/m peak amplitude with a slew rate of 120 mT/m/ms. This performance level can be achieved over the entire FOV with best-in-class linearity. The gradient system design is force-balanced that minimizes vibration levels and acoustic noise. The Quasar gradient system delivers high performance levels required for routine clinical whole body applications.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
--------	--------	-------------	-----	------	-------

- High performance gradients system capable of on axis (x, y and z) 40 mT/m peak and 120 T/m/s slew rate.
- High linearity actively shielded gradient coil designed to minimize eddy currents and acoustic noise, and to provide accurate spatial encoding over a large 50cm whole body field of view.
- State-of-the-art water-cooled gradient amplifier technology combined with a non-resonant coil design, allows flexible generation of any type of gradient waveform with 100 % duty cycle.
- SofTone reduces gradient acoustic noise by up to 30 dB (an 86 % reduction in patient-perceived acoustic noise).

FreeWave digital RF system

Achieva XR is powered by Philips' FreeWave platform, the first entirely direct digital broadband spectrometer. With a scaleable architecture, outstanding SNR performance and unique 3MHz bandwidth per RF channel, FreeWave is prepared to perform advanced clinical techniques today, and expand for tomorrow.

RF Receive:

- 16 RF channels standard.
- Direct Digital Sampling at 80 MHz per channel with no analog demodulation.
- 3MHz Receiver Bandwidth per channel.
- Simultaneous connection of multiple coils (total of 32 quadrature coil elements).
- Modular expandable architecture

RF Transmit:

- RF amplifier: 18kW High-performance solid-state RF power amplifier allow un-compromised access to the shortest, most complex RF pulses, even on large patients.

Real Time Control with Freewave RF Platform:

- Sub-millisecond TRs and ultra-short TEs provide improved image quality and reduced examination times.
- Real-time imaging control for clinical motion correction, including SnapShot and optional navigator-corrections required for free-breathing cardiac techniques and high-resolution diffusion (i.e., PhaseTrak) with profile updates within 1 ms.
- Real-time control of RF transmission, gradient switching, data acquisition and triggering.

Standard RF coils:

- Quadrature Transmit/Receive integrated body coil
- 17 cm Circular Flex coil

Standard Accessories:

- Comprehensive set of Patient Fixation straps

The arm support is designed to work in conjunction with the existing MR tabletop to provide additional support for a patients arm when injections are required. The support easily slides under the patient.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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Features:

- Transparent arm support contoured to match the MR table-top
- Positioning on either side of table

MR WorkSpace

The MR WorkSpace is a unique configurable solution for MR workflow targeted at resolving the management of the increasing volume of MR patient data. The MR WorkSpace includes the MR operator's console.

The MR WorkSpace can incorporate optional, advanced MR processing capabilities, directly sending the results to PACS. The result is a seamless working environment that can conform to the needs of any MR department - boosting its efficiency and productivity while avoiding the expense of dedicated workstations.

MR operator console:

ExamCards

ExamCards, a cornerstone of the MR operator console, are complete, pre-set imaging protocols that can be automatically executed with push-button ease. ExamCards contain a structured multi-sequence examination, along with automated post-processing to automatically execute entire patient studies. ExamCards involve minimal user interaction, shorten overall exam time, reduce training requirements, and improve reproducibility of examinations. Users have full freedom to customize ExamCards. The NetForum Community allows Philips users to download best-practice ExamCards created by experts worldwide. NetForum unites Philips users with Philips and with one another via Internet access to a secure Philips website directly from the MR operator console or from any PC. Netforum also provides access to the latest training seminars, instructions for use and applications tips and guides.

- Single mouse-click scanner operation.
- Automated scanning.
- Automated post processing.
- Complete patient studies may be defined and stored, including comprehensive user tips.
- Geolinks enable scan geometries to be defined and automatically copied between sequences.
- Sequences and patient location (multi-station studies) may be arbitrarily ordered for optimum acquisition, and data is automatically sorted and viewed correctly.
- In addition to standard delivered ExamCards additional ExamCards are downloadable from NetForum or copied from system to system.
- ExamCards can be locked with a password to prevent unintended changes.

SmartExam

SmartExam automates exam planning, scanning and processing - all with a single mouse click. Its software automatically recognizes the anatomy, plans the MR exam, employs ExamCards to conduct the study and then processes the image for 100% reproducibility and consistency.

SmartExam:

- Provides consistent, reproducible images
- Delivers uniform image quality, regardless of operator expertise, patient age, patient position or pathology
- Makes better use of the technologists' time
- Assures consistency in follow-up exams, improving patient care
- Provides a faster scanning experience for patients

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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Viewing, processing and filming

MR Workspace supports fast and flexible viewing, processing and film generation at each workspot.

- Window width/level, zoom, pan, rotate, mirror.
- Image annotation (text, arrows and lines).
- Image arithmetic (including addition, subtraction, division and multiplication).
- Image measurement (including distance and angle, profile or histogram display and X-Y coordinate calculation).
- Regions of Interest (ROI) statistics (area, volume, mean and standard deviation) from user defined (square, rectangular, circular, elliptical or irregular) shapes.
- Time Intensity analysis of dynamics/phases.
- Volume calculation from contours drawn in adjacent slices.
- Simultaneous visualization of up to four independent series for comparison.
- Cine movie display of up to 24 slices or dynamics/phases
- PicturePlus for user-defined reduction of noise over images in combination with edge enhancement.
- Real-time MIP, MPR and 3D surface rendering (User defined volumes of interest enable elimination of unwanted signal regions).
- Rapid, single mouse click film generation of image series using a range of predefined formats.
- "Pick & place" functionality enables the creation of films containing random image selections.
- Images and movies can be exported to Windows PC formats.

Connectivity / Interoperability

The MR Workspace fits seamlessly into local network environments. Communication is via DICOM protocols. The system can be configured for safe storage of MR images and other patient data in departmental information systems and PACS. The MR WorkSpace conforms to the new Enhanced (multi-frame) MR DICOM standard, which improves the performance of data transfer of large data sets and fully supports information associated with Diffusion and Spectroscopy.

The system can be configured (per node) to support standard DICOM MR image transfer or DICOM Enhanced MR Image Transfer. If a receiving node does not support DICOM Enhanced MR, standard DICOM MR Images will be transferred.

- DICOM Workflow Management:
 - DICOM Modality Worklist
 - DICOM Modality Performed Procedure Steps
 - DICOM Storage Commitment
- DICOM Send/Receive:
 - DICOM Enhanced MR:
 - Export / Import of DICOM Enhanced MR Images
 - Export / Import of DICOM MR Spectroscopy
 - Export / Import of DICOM Raw
 - DICOM MR:
 - Export / Import of DICOM MR Images
 - Export / Import of Philips Private MR Series Data
 - Export / Import of Philips Private MR Spectrum Data
- DICOM Query / Retrieve of Philips MR data, all the exported image types
- DICOM Print

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
		<ul style="list-style-type: none"> Grayscale Softcopy Presentation State with preset window settings as on the console Basic Grayscale Print DICOM Media <ul style="list-style-type: none"> MR Studies on DVD (Read / Write) MR Studies on MOD (Read) (optional) IHE Integration Profiles <ul style="list-style-type: none"> Scheduled Workflow Patient Information Reconciliation Consistent Presentation of Images Basic Security 			

Full information on compliance with DICOM standards and available functionality is contained in Philips' DICOM Conformance Statement.

Computer System:

Achieva XR X-Series system's distributed computing architecture is based on the latest computer and operating system technology. With separate processors for scanning, image reconstruction, viewing and processing, the architecture provides true real-time performance with reconstruction speeds exceeding 1300 images per second.

- >= 23-inch LCD wide-screen format monitor
- >=2.6 GHz Quad Core Intel processors
- Windows XP OS 64 bits
- 8 GB host memory
- >=140 GB system disk
- >=140 GB main image database disk (Approx. >= 250,000 images –(256 x 256 image resolution)
- External storage via USB port
- DVD reader for software loading
- 10BaseT, 100BaseT or 1000BaseT connections.
- Fast reconstruction of demanding imaging techniques (interactive real-time, SENSE, high resolution and high coil channel count).
- >= 1300 images per second (256 x 256 reconstructions)
- >=2.6 GHz quad core processor reconstruction
- 12 GB reconstruction memory

Standard office table for MR-operator

- Table surface 160x100 cm
- Adjustable Height

DVD-PC

Local media storage option intended for burning and reading DICOM data on medical grade DVD's. This option enables the operator to burn DVD's directly or prepare multiple DVD's for burning later.

- Includes DICOM viewer on every DVD created
- Create multiple DVD's for exchange with off-line stations
- Burn DVD's independently of other scanner functions.
- 160 GB hard drive

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
		<ul style="list-style-type: none"> Dimensions (hwxwd): 10x34x38cm 			

Clinical Education Program for Achieva XR Systems

Essentials OffSite Education: The MR Essential course is a prerequisite to attending the MR Advanced course, 989801292088. Philips will provide up to two (2) technologists, as selected by customer, with in-depth didactic, tutorial, and hands-on training covering basic functionality and work-flow of the magnetic resonance imaging system. This thirty-six (36) hour class is located in Cleveland, Ohio, and is scheduled based on your equipment configuration and availability. Due to program updates, the number of class hours is subject to change without notice. Customer will be notified of current, total class hours at the time of registration. In order to provide trainees with the ability to apply all fundamental functioning on their system, and to achieve maximum effectiveness, this class should be attended no earlier than two weeks prior to system installation, and trainee should have prior knowledge of basic MR theory. CEU credits may be available for each participant that meets the guidelines provided by Philips.

Handover OnSite Education: Philips Education Specialists will provide twenty-eight (28) hours of education for up to four (4) students, as selected by customer. Students should attend all 28 hours, and must include the two OffSite education attendees. This course does not cover Cardiac or Spectroscopy. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. Note: Site must be patient-ready, including all inspections approved, all accessory equipment installed and functioning (injectors, hard copy units, film processors and physiologic monitors), and all supplies stocked. Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

FollowUp OnSite Education: Philips Education Specialists will provide twenty-eight (28) hours of Follow-Up Education for up to four (4) students, selected by customer, including technologists from night/weekend shifts if necessary. Customer must have operated the system for at least 30 days. CEU credits may be available for each participant that meets the guidelines provided by Philips. Note: Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

PLEASE NOTE for all OnSite Education: It is recommended to purchase additional training, 16 or 24 hours, for customers purchasing specialist packages and requiring dedicated training for Breast Imaging, BOLD fMRI, or MultiNuclear Spectroscopy.

Advanced OffSite Education: Philips will provide one (1) technologist, with a series of lectures and hands-on experience introducing the advanced concepts and theory of MRI for Achieva, Intera and Panorama HFO systems. Philips recommends that the attendee of this course has previously attended the MR Essentials class. This twenty-eight (28) hour class is located in Cleveland, Ohio, and is scheduled based on your equipment configuration and availability. Due to program updates, the number of class hours is subject to change without notice. Customer will be notified of current, total class hours at the time of registration. This course should be attended at least thirty days after OnSite handover training. CEU credits may be available for each participant that meets the guidelines provided by Philips.

Advanced OnSite Education: Philips Education Specialists will provide twenty-four (24) hours of advanced education for up to four (4) students, as selected by customer. This training is recommended to be scheduled after the user is proficient on the basic MR system. CEU credits may be available for each participant that meets the guidelines provided by Philips. Please refer to guidelines for more information. **Additionally, Philips recommends that a minimum of one attendee has attended all previous training entitlements for your system.** Note: Philips personnel are not responsible for actual patient contact or operation of equipment during education sessions except to demonstrate proper equipment operation.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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PLEASE NOTE: For all OffSite Education listed above: CEU credits may be available for each participant that meets the Guidelines provided by Philips. **Travel and lodging are not included, but may be purchased through Philips. It is highly recommended that 989801292093 (MR Full Travel Pkg OffSite) is purchased with all OffSite courses.** Due to program updates, the number of class hours is subject to change without notice. Customer will be notified of current, total class hours at the time of registration. OffSite training is scheduled based on your equipment configuration and availability.

MR Registry Review: This self study program consists of twelve (12) comprehensive study modules that are delivered in a reference binder. Each module contains thirty to eighty pages of easy-to-follow text, with an abundance of illustrations, images and summaries, written in the language of the clinical technologist. This course is designed to help the technologist prepare to pass the ARRT's post-primary exam in MR, and has been accredited for twenty-six (26) Category A CE credits. Credits are earned by passing a post-test for each study module.

MR Cross Trainer: This self study program consists of six (6) comprehensive study modules that are delivered in a convenient reference binder. Each study module contains thirty to sixty pages. The program is designed to acquaint the technologist with important principles, equipment and exams of MR. This course has been accredited for eighteen (18) Category A CE credits, that are earned by passing a post-test for each study module.

MR Sectional Anatomy & Imaging Strategies: This self study program consists of six (6) comprehensive study modules that are delivered in an easy to follow book format. Each study module contains thirty-five to seventy pages. The first study module introduces the technologist to the concepts and terms used when working with sectional anatomy imaging modalities. Study modules 2-6 focus on specific regions of the body by identifying key anatomical structures and their physiological significance as well as practical sectional imaging strategies. This course has been accredited for eighteen (18) Category A CE credits, that are earned by passing a post-test for each study module.

Education expires one (1) year from equipment installation date (or purchase date if sold separately). Ref# 191370371088373089127128-100615

2	**NNAF292	Chiller for 1.0 or 1.5 or 3.0T Systems	1		
		Chiller hardware with specification in accordance with cooling requirements necessary for selected MR scanner. Installation cost is not included.			
3	**NMRB094	SCANTOOLS PLUS	1		
		ScanTools Plus provides dedicated packages of optimized examinations for virtually all clinical applications and body regions including:			
		<ul style="list-style-type: none"> • Neuro Plus • Ortho Plus • Angio Plus • Body Plus • Breast Plus • Onco Plus • Cardiac Plus • Pediatric Plus 			

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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Each Plus package consists of application-specific ExamCards, imaging sequences, and acquisition and reconstruction methods that exploit the power of the system, along with the necessary specialized image processing and viewing tools for the MR WorkSpace.

Key features of ScanTools Plus:

SAMESCAN:

SameScan enables fast, easy and precise follow-up in brain studies. Through identification of key anatomical landmarks, SameScan allows the exact scanning parameters, slice positioning and geometry of a patient's previous study to be acquired in subsequent examinations.

EXAMCARD PROCESSING :

ExamCard Processing streamlines clinical workflow by fully automating data processing for a number of routine clinical applications. Processing takes place in the background immediately following completion of the acquisition. Includes:

- Diffusion Maps (ADC, eADC and Trace) and Diffusion Registration
- Image Algebra (Addition, Subtraction, Division, Multiply, Magnetization Transfer Coefficient Ratio)
- PicturePlus

ExamCards definitions can to be saved to the database along with the acquired images.

MOBIVIEW:

Enables automatic, single mouse-click composition of data sets from multi-station acquisitions into full FOV images. Applications include Runoff MRA, Complete CNS and Complete Torso.

Composite images may be displayed, stored, filmed and exported via DICOM and PC-compatible formats. These images are compatible with viewing, measurement and processing tools, including MIP, MPR and 3D surface rendering. MIPs may be performed around an axis defined in any of the individual data sets.

MOBIFLEX:

Facilitates and simplifies the setup and acquisition of complex multi-station exams. MobiFlex allows complete multi-station exams to be planned with a single mouse-click. The individual acquisitions may be acquired with different FOVs, resolution, geometries and SENSE acceleration factors. MobiFlex also can be combined with BolusTrak and CENTRA. With MobiFlex, multi-station exams, consisting of different sequence types at each station, the acquisition order can be optimized to minimize total scan time, time between stations and table movement.

SENSE:

Provides true acceleration in image acquisition with SENSE-compatible coils up to a 4-fold (3D acquisition) acceleration in acquisition speed, independent of resolution and matrix size. SENSE is compatible with the vast majority of imaging techniques including diffusion, in which SENSE reduces the echo train length to increase SNR and reduce susceptibility effects, and dynamic techniques such as TRACS, e-THRIVE and BLISS.

e-THRIVE:

e-THRIVE is a newly designed method for enhanced dynamic contrast application that results in sharper delineation of vessels and liver parenchyma as well as better tissue contrast.

- T1 W dynamic volumetric excitation
- Linear k-space trajectory with half scan in slice and phase direction

e-THRIVE can be combined with SENSE to enable isotropic high-resolution T1-weighted images with extensive volumetric coverage and uniform fat suppression, in short breath-hold times and in any imaging plane. e-THRIVE is ideal for dynamic liver, small bowel, breast, prostate and pancreas imaging. Isotropic images are excellent for MIP and MPR.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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BLISS:

BLISS is a multi-volume imaging technique that enables the collection of two bilaterally placed volumes within a single acquisition. Localized shimming is performed for each volume for optimal fat suppression. BLISS is ideal for high-resolution sagittal breast studies, and uses SENSE for rapid scan times.

VISTA:

VISTA provides 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. Images are ideally suited to imaging of the spine, creating multiple orientations through MPR processing.

SNAPSHOT:

Snapshot imaging eliminates the effects of patient and physiological motion through the combination rapid TSE sequences with the acceleration of 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.

MULTIVANE:

MultiVane delivers high resolution diagnostic images even in the case of severe patient motion. MultiVane provides motion correction to multi-shot TSE (T1, T2, IR-real, FLAIR) and gradient-echo examinations through the use of radial encoding and selective usage of acquired data lines based on motion criteria. MultiVane can be used in brain examinations of the brain, in addition to other anatomical areas.

DIFFUSION:

Single-shot EPI diffusion-weighted (DWI) sequences permit motion-free visualization of isotropic DWI images - with three diffusion directions and up to 16 b-values per scan - and automated creation of Apparent Diffusion Coefficient (ADC) maps.

SPAIR:

A high uniformity fat saturation method making use of adiabatic spectral saturation pulses, ensures insensitivity to RF field inhomogeneities and lowers SAR. SPAIR is ideal for applications such as liver, shoulders, pelvis and hips.

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.

TRACS:

TRACS enables accelerated time-resolved contrast-enhanced vascular imaging. TRACS uses SENSE for image acceleration and CENTRA phase-encode ordering for optimized contrast.

TRANCE:

TRANCE is a high contrast sequence that does not require contrast agents. It applies a 3D technique with cardiac triggering that uses varying signal intensity in vessels during the cardiac cycle. An automatic subtraction of these two phases will result in visualization of arteries only.

PROSET WATS and FATS:

Combines the characteristics of the high-resolution volume acquisitions with ProSet water or fat

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
--------	--------	-------------	-----	------	-------

only selection. Applications include T1-weighted Body and Spine Nerve Root Visualization and Cartilage imaging and MR arthrography in orthopedics.

ASYMMETRIC TSE:

Extended contrast control for TSE acquisitions through optimized mapping of individual echoes into the image. Applications include proton density weighted imaging of joints with higher spatial resolution or faster scan times.

m-FFE:

m-FFE provides unique image contrast - ranging from 2D or 3D gradient-echo sequences to the combination of echoes. m-FFE is very useful for neuro and musculoskeletal applications.

REFOCUS CONTROL:

Uses sophisticated flip angle sweep control in TSE acquisitions to optimize contrast-to-noise and scan time, while at the same time controlling SAR levels.

DRIVE:

Enables shorter TRs while maintaining contrast-to-noise and SNR for T2-weighted 2D and 3D TSE acquisitions, resulting in shorter scan times and increased resolution.

3D TFE:

3D TFE enables isotropic coverage of the entire head in scan times under 2 minutes, using acceleration factors of up to 4 (2*2). A single data set can be reformatted into alternate planes both pre- and post-contrast, eliminating the need for additional scans.

BLACKBLOOD:

Features pre-pulses to achieve suppression of the blood signal for optimum myocardial and lumen visualization in cardiac and vascular imaging.

CLEAR:

CLEAR provides a unique signal uniformity correction based on coil-sensitivity and on patient loading. CLEAR improves image uniformity, reduces bright fat signal at the surface of coils, and extends the effective coverage of phased array coils.

PICTUREPLUS:

PicturePlus is an image enhancement tool that can improve the appearance of images through edge enhancement and smoothing. The operator has control over enhancement parameters, which can be applied automatically post-acquisition or as a post-processing option.

T2* PERFUSION:

Dynamic multi-slice T2*-weighted sequences based on single- or multi-shot FFE or FFE EPI methods.

EPI BOLD:

EPI BOLD provides dynamic multi-slice T2*-weighted sequences based on single- or multi-shot FFE and SE EPI methods.

VENOUS BOLD:

Provides T2*-weighted 3D sequences compatible with SENSE, allowing high-resolution acquisitions in short scan times. These sequences are useful for evaluating various brain anomalies associated with blood.

VCG Gating:

VectorCardioGram Gating is a more robust method than regular ECG gating, providing virtually 100 % triggering accuracy. VCG greatly reduces operator setup time and thus overall exam time, even for patients with pathologic ECG patterns. This method provides automatic adjustment to the electrical axis of the patient's heart and to the specific multi-dimensional QRS waveform. Includes a four-lead cable set.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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FLOW:

Phase contrast (PC) sensitive imaging enables depiction of moving fluid without any background signal that is sensitized in all three directions with variable VENC values. Retrospectively gated 2D multi-phase acquisitions permit evaluation of blood or CSF flow. Retrospectively gated TFE PC enables quantitative measurements in one breath hold. Quantitative flow allows non-invasive measurements of blood flow or CSF flow in three directions.

B-FFE/TFE:

Ultra-fast steady-state 2D and 3D imaging techniques are insensitive to fluid motion, thereby producing exceptional contrast between bright fluids and surrounding tissue. These techniques provide optimal myocardium-to-blood contrast for (functional) cardiac studies. High-resolution isotropic data sets are ideal for MIP and MPR processing to visualize the inner ear, and to produce myelograms in addition to non-contrast enhanced angiograms.

Clinical Packages:

Neuro Plus

The Neuro Plus package provides High-quality, high-resolution neuro imaging results, which allows for the assessment of morphology in the brain and spine. Features include:

- ExamCards for head and spine imaging
- SENSE imaging for all Philips SENSE coils allowing faster scan times or improved susceptibility suppression.
- High-resolution acquisitions on the order of 1024 acquisition and reconstruction
- Large FoV for Spine studies
- MobiFlex compatible with all sequences to allow for improved Total Spine imaging to be visualized in the MobiView package for seamless single mouse-click Total-spine evaluation.
- Sequences include SE, FFE and EPI based methods
- Fat suppression provided by STIR, SPIR, ProSet and SPAIR methods
- 3D based sequences for TSE including DRIVE for improved fluid visualization (IAC)
- Balanced FFE/TFE for high-resolution high contrast (IAC and Spine applications).
- Single, Dual and Triple IR sequences for evaluation of gray and white matter differentiation
- VISTA: Isotropic 3D TSE allows volumetric acquisitions that can be reconstructed in any plane (e.g. Brain and Lumbar spine)
- 3D T1-TFE sequences allow volumetric acquisition and reconstruction of the original dataset in any orientation (e.g., Brain gray/white matter differentiation). Can be applied with both full and partial integer SENSE factors in either primary or slice direction to reduce scan times.
- FLAIR for CSF suppression (TSE and EPI based)
- Multiple radial projection myelography as well as 2D and 3D sequences.
- ProSet water and fat excitation for nerve root imaging
- Snapshot imaging for uncooperative patients
- MultiVane to correct motion for multi-echo TSE examinations using radial encoding
- Multi-slice, multi-echo TSE with up to 32 echoes per slice
- Flip Angle Sweep TSE for reduction of SAR and decrease of MT effects improving gray/white matter contrast in both T2 and FLAIR acquisitions
- DWI based methods include single-shot with automated processing of the ADC maps (for both brain and spine DWI)
- T2* based sequences for Perfusion and fMRI sequences including FFE-EPI, SE-EPI
- T2* perfusion curve analysis

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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Body Plus

Body Plus enables fast high-resolution scan methods for Torso imaging.

Features include:

- ExamCards for chest, abdomen and pelvis imaging
- Sequences for both 2D and 3D acquisitions
- Triggered, Multishot BH and free breathing ultra-short TSE sequences are available
- All sequences compatible with SENSE for reduced breath-hold time and CLEAR homogeneity correction for fast high-quality body imaging.
- In and out of phase breathhold FFE and TFE. TFE for fast T1- weighted imaging (using inversion and saturation pre-pulses) can also be combined with free breathing snapshot imaging.
- e-THRIVE compatible with either SPIR or SPAIR fat suppression, allow for choice between high-resolution and or improved isotropic acquisitions in a single breathhold (can be used for dynamic high-spatial and temporal resolution imaging for Liver and Colonography)
- Keyhole imaging for high temporal dynamic studies.
- Proset with 3D volume acquisition T1 weighted scans(useful for pancreas and liver breath-hold imaging)
- MRCP/U sequences acquired by SSH, radial SSH and 3D acquisitions allows for high-resolution imaging with or without triggering or Breath hold imaging
- MultiEcho T2 measurements (up to 32 echoes) for T2mapping.
- Free-breathing non-contrast enhanced portal vein imaging with B-TFE
- High-resolution pelvic imaging with short exam times afforded by SENSE and excellent fat-suppression supplied by SPAIR adjustable fat-suppression technique.
- VISTA: Isotropic 3D TSE allows volumetric acquisitions that can be reconstructed in any plane (pelvis)
- T1 perfusion curve analysis

Breast Plus

Breast Plus enables both high-spatial and/or temporal resolution. Efficient breast imaging via the use of ExamCards. BreastPlus offers sequences for both 2D and 3D acquisitions and include:

- ExamCards for breast imaging
- e-THRIVE and BLISS, which are compatible with either SPIR or SPAIR fat suppression,
- High-resolution T1 and T2 TSE sequences compatible with SENSE for fast high-resolution scanning and CLEAR homogeneity correction.
- Silicone only sequences optimized for breast implants are also provided.

Ortho Plus

Ortho Plus provides both high-resolution and fast orthopedic imaging supporting assessment of morphology in the spine and extremities.

Features include:

- ExamCards designed for orthopedic imaging
- Sequences include both 2D and 3D methods with volumetric acquisitions.
- SE, TSE, FFE sequences, with fat-suppression provided by STIR, ProSet, SPIR and adjustable fat-suppressed method of SPAIR. Can be combined with up to 1024 acquisition resolution for improved detection in orthopedic imaging

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
		<ul style="list-style-type: none">• SENSE imaging for all Philips SENSE coils allowing faster scan times and CLEAR homogeneity correction.• DRIVE combined with TSE allows for increased sensitivity to fluids• Balanced FFE for high-inplane and throughplane evaluation of joint diseases.• Turbo-STIR for fat-suppressed evaluation of bone bruises.• TSE sequence with asymmetric profile ordering lets users select TE in a fixed shot length, enabling high-resolution imaging in short scan times. Particularly useful in PDW sequences.• m-FEE combining echos for all 2D and 3D gradient echo sequences.• 3D FFE with ProSet for water only selective sequences. Optimizes cartilage and/or fluid imaging with high-resolution in all directions.• e-THRIVE for 3D high-resolution fat-suppressed imaging for MR arthrograms• MobiFlex compatible with all sequences to allow for improved Total Spine imaging to be visualized in the MobiView package for seamless single mouse-click Total-spine evaluation.• Dynamic imaging sequences for TMJ applications in combination with specific coils allows high-resolution fast imaging scans• Improved susceptibility reduction sequences implemented to include SENSE, modifications of water-fat shift and manipulable bandwidth for improved imaging in the presence of prosthesis.			

Cardiac Plus

Cardiac Plus provides high-quality cardiac imaging supporting assessment of cardiac morphology, and functional studies of the heart and surrounding vessels.

Features include:

- ExamCards designed for cardiac imaging
- VectorCardioGram (VCG) for near-100% triggering accuracy, even for patients with pathologic ECG patterns. Provides automatic adjustment to the actual electrical axis of the patient's heart and to the specific multi-dimensional QRS waveform. Includes a four-lead cable set and Philips' patented vector processing algorithm. High R-peak detection rate results in shorter scan times.
- Black Blood Imaging for optimal myocardial imaging
- 2D/3D Balanced FFE provides optimal myocardium-to-blood contrast for (functional) cardiac studies.
- All sequences are compatible with cardiac triggering, with SENSE and CLEAR homogeneity correction.
- Single Slice - Multi Phase for functional cardiac studies
- Arrhythmia Pro arrhythmia rejection technique. Performs retrospective gating with real-time prospective updating, then rejects and reacquires atopic heart beats in real time for full R-to-R coverage.
- Infill enhances the cine viewing of cardiac studies by reconstructing additional intermediate frames. Used in conjunction with full R-to-R imaging.

Angio Plus

For high-quality fast and high-resolution imaging for both non-contrast and contrast vascular exams. Angio Plus features routine procedures built in ExamCards for vascular imaging.

Features include:

- ExamCards designed for angio imaging

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
		<ul style="list-style-type: none">• 2D and 3D sequences for Inflow techniques Contrast Enhanced and Phase Contrast Angiography sequences.• SENSE imaging for all Philips SENSE coils allowing for increased temporal resolution or higher resolution scanning in standard scan times. Inflow sequences can be combined with CHARM for uniform signal intensity over large 3D volume acquisitions, TONE for improved contrast and MTC for reduction of fat Signal (peri-orbital fat)• Inflow and PCA sequences can be combined with ECG and/or VCG triggering for optimal image quality in anatomies with pulsatile flow (popliteal or areas where retrograde flow is an issue).• 2D/3D Balanced TFE/FFE for fast, high-resolution non-contrast enhanced vascular imaging.• Quantitative blood and CSF flow sequences utilizing retrospective triggering PCA.• MultiVenc PCA sequences• Quantitative flow allows non-invasive measurements of blood flow or CSF flow in three directions• BolusTrak for accurate triggering of bolus arrival in contrast enhanced exams• 3D high-resolution contrast enhanced imaging with CENTRA to allow increased spatial resolution without venous contamination (e.g., in high resolution CE Arch studies and lower leg station of peripheral run-off studies), CENTRA can also be combined with SENSE for improved arterial vessel delineation in dynamic scans.• Keyhole imaging to improve temporal resolution in dynamic studies.• TRACS to accelerate time-resolved contrast-enhanced vascular imaging with a factor 4.• MobiFlex feature in combination with multi-station compatible coils to allow for improved peripheral run-off studies through flexible coil selection, scan resolution (both in and thru-plane and automatic table movements, can be combined with the use of single mouse click multi-station viewing (MobiView) for display.			

Onco Plus

OncoPlus provides high-quality assessment in all anatomical areas for better lesion visualization.

Features include:

- ExamCards designed for oncology imaging
- High gradient linearity allows for improved therapy planning and accurate QBC imaging results
- All Philips phased array coils compatible with CLEAR, SENSE for improved image quality and faster scan times
- Large Field-of-View allows for improved screening
- ExamCards for single-pass multi-station imaging with user-defined contrasts per station, supporting easier characterization of lesions.
- 1024 scan resolution for improved small lesion detection
- 2D and 3D sequences including STIR, IN/OUT of phase imaging, e-THRIVE and dynamic imaging sequences
- Dynamic scan techniques for monitoring and evaluation allow for contrast uptake kinetic viewing

Pediatric Plus

Pediatric Plus provides fast, patient-friendly imaging of pediatric patients.

Features include:

- ExamCards for pediatric imaging

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
		<ul style="list-style-type: none"> • SofTone ensures very fast imaging combined with noise reduction techniques dramatically reducing acoustic noise. • SENSE imaging for all Philips SENSE coils allowing faster scan times or improved susceptibility suppression. • Sequences include SE, FFE and EPI based methods • Fat suppression provided by STIR, SPIR, ProSet and SPAIR methods • 3D based sequences for TSE including DRIVE for improved fluid visualization (IAC) • Balanced FFE/TFE for high-resolution high contrast (Fetal, IAC and Spine applications) • Single, Dual and Triple IR sequences for evaluation of gray and white matter differentiation • Black blood imaging and 2D/3D B-FFE for optimal assessment of congenital heart disease 			

Capabilities:

Setup and Planning:

ExamCards (Complete automated patient studies including scanning and processing)
PlanScan (Freestyle planning of scan geometries and positions)
SameScan (Planning for follow up based on anatomical landmarks)
FlexPlan (Planning based on selection of three anatomical landmarks)
Repeat Scan (Repeats any archived study)
AutoShim (Regional shim volumes)

Acquisition:

2D (Single-slice, Multiple single-slice and Multi-slice)
3D (Single-stack and Multi-stack)
GeoLinks multistack scans with different geometry and resolution parameters
3D Multi-Chunk (Volume divided into set of contiguous 3D in scans)
Dynamic (Maximum 1024 phases)
Single- and Multi-station (Maximum of 4 stations)
MobiFlex (Multi-station advanced control)
Manual start (Controlled from the gantry or operator's console)
Matrix (Maximum 1024)
Phase matrix (Rectangular FoV, fold over suppression, zero interpolation)
Field of View

Anatomical Imaging:

Spin Echo (Single and multi-echo up to 32 echoes, and asymmetric multi-echo, T2-map generation)
Inversion Recovery (IR, STIR, FLAIR, Dual IR for fat, fluid and tissue suppression, Magnitude and Real Images)
2D/3D TSE (Snapshot, Single and Multi-Shot, Single and Multi-contrast, includes all IR contrast methods above, DRIVE, Asymmetric encoding, Flip angle Sweep)
2D/3D FFE (with and without RF Spoiling)
2D/3D Balanced-FFE
2D/3D TFE (with and without RF Spoiling, T2 Pre-pulse contrast)
2D/3D Balanced-TFE
3D e-THRIVE
3D BLISS
3D VISTA
2D EPI (Single Shot, SE and FFE readout types, FLAIR)
Mixed Mode (Interleaved IR/SE for T1, T2, PD calculation)
Turbo factor (maximum 256)
EPI factor (maximum 63)

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
		Angiography:			
		2D/3D ToF (including Turbo, gating)			
		PCA (including Turbo, gating and with variable VENC)			
		TONE optimized RF excitation profile			
		MOTSA (multi-chunk acquisition)			
		CHARM (reconstruction minimizes signal anomalies at borders of chunks)			
		MT (magnetization transfer)			
		CE-MRA			
		BolusTrak			
		MobiTrak automated table motion and image subtraction			
		CENTRA			
		TRACS			
		TRANCE			
		Diffusion Imaging:			
		2D TSE (Snapshot, FLAIR)			
		2D EPI: (Single Shot, SE and FE readout, FLAIR)			
		Single and multiple b-values up to 16 per scan			
		Perfusion & BOLD Imaging:			
		2D EPI: (Single Shot, SE and FE readout)			
		Cardiac Imaging:			
		Turbo B-FFE/TFE			
		Turbo PCA with variable VENC			
		Breathhold			
		Single-slice multi-phase			
		Prospective gating			
		Retrospective gating (with real-time prospective updating)			
		Arrhythmia Pro (arrhythmia rejection technique)			
		InFill (reconstructs intermediate cardiac phases)			
		Image Acceleration:			
		SENSE (with fractional acceleration control)			
		Keyhole (SE, FFE and TFE)			
		k-Space Shutter (Up to 25% 3D scan time reduction)			
		HalfScan			
		Rectangular FoV			
		Overcontiguous Slices			
		Prepulses, Saturation and Contrast:			
		Saturation (REST, Shared REST, Positioned freely or parallel or perpendicular to scan plane)			
		Fat Saturation (SPIR, SPAIR)			
		ProSet (Water/Fat Selection)			
		WATS and FATS			
		Black Blood			
		Silicon			
		Magnetization Transfer Contrast (MTC)			
		Flip Angle Sweep			
		Motion Correction and Control:			
		Gating (VCG, Respiratory, PPU)			
		FlowComp			

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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PEAR (respiratory monitored phase encode ordering)
 SMART (optimized temporal data collection and averaging order)

Image Optimization:

CLEAR
 PicturePlus

4	**NMRA993	SENSE Head Coil 1.5T 8	1		
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The SENSE Head Coil has 8 elements that are ideally suited for complete high-resolution, full coverage brain imaging, including MR angiography, spectroscopy and functional neuro examinations. The crown-shaped design enables clear visualization of the lateral and cortex areas while its open design focuses on patient-friendliness.

Features:

- Maximum SENSE factor of 8
- Coil is delivered with mirror
- Outside coil dimensions in 320 x 540 x 630 mm
- Compatible with an 8- or 16-channel FreeWave platform on 1.5T

5	**NMRA856	1.5T ELITE COIL PACK	1		
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The **SENSE Flex M coil** is a general-purpose coil that consists of two flexible elements. This coil enables a wide variety of applications, including shoulder imaging, pediatric (e.g. hip and brain), elbow and hippocampus imaging. In shoulder imaging, the unique coil design allows easy positioning of the arm above the patient's head.

Features:

- Maximum SENSE factor of 2
- Aperture 11 x 14 cm
- Outside coil dimensions 90 x 300 x 650 mm
- Compatible with all RF platforms with 4 or more channels on 1.5T

The **SENSE Head Spine coil** has 33 elements and is dedicated for fast & total neuro imaging with excellent image quality. The coil combines an 18-element SENSE NeuroVascular coil and a 15-element SENSE Spine coil, both of which can be combined or used separately.

- The 18-element SENSE NeuroVascular coil enables high-resolution imaging of the brain, c-spine, neck or complete neurovascular area, including MR angiography, spectroscopy and functional neuro exams.
- The 15-element SENSE Spine coil is designed for optimal ease-of-use and patient positioning and affords excellent image quality in thoracic and lumbar spine scanning.

The product includes all pads necessary for combined and individual coil use. The operator can remove the anterior section to enhance the patient's perception of openness. The operator also may select a wide range of clinically useful element combinations.

Features:

- Maximum SENSE factor of 16
- Head Posterior section:

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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- Outside coil dimensions 380 x 540 x 690 mm
- Head Anterior section:
 - Outside coil dimensions 580 x 520 x 250 mm
- Spine section:
 - Outside coil dimensions 80 x 540 x 950mm
- Compatible with all RF platforms with 16 or more channels on 1.5T

The **SENSE XL Torso coil** has 16 elements that are optimized to image the organs of the thorax, abdomen and pelvis. The sensitive volume provides detailed imaging of the liver and biliary system, spleen, kidneys, pancreas, adrenals, mediastinum, pulmonary and abdominal vasculature and Brachial Plexus. The coil consists of a flexible 8-channel anterior and a flexible 8-channel posterior coil. Due to its patient friendly flexible design, the coil can comfortably be applied to the patient's chest or abdomen to ensure optimal patient comfort and image quality.

Features:

- Maximum SENSE factor of 12
- Outside coil dimensions 100 x 450 x 650 mm
- Compatible with all RF platforms with 16 or more channels on 1.5T

6 ****NMRA768 KNEE/FOOT COIL 1.5T 4 1**

The **Knee/Foot coil** has a - 4 elements - phased array design. The coil is designed for routine imaging of the knee and the foot. The coil consists of different parts: one posterior section, one anterior section for knee imaging and one anterior section for foot imaging, including ankle imaging. The coil is positioned on a baseplate and can be slid in different left/right positions. The coil is easy to operate and provided with positioning accessories for maximum patient comfort during the examination.

Features:

- Inside diameter is 18cm
- Outside coil dimensions
 - Knee part: 260x250x280 mm
 - Foot part: 340x250x280 mm
- Compatible with all RF platforms with 4 or more channels on 1.5T

7 ****NMRA769 SENSE WRIST COIL 1.5T 8 1**

The **SENSE Wrist coil 8** has 8 elements that closely encircle the wrist for high SNR. This design provides the high SNR needed to acquire images using a smaller than/equal to 8 cm FOV. The coil can be used with the patients arm raised above their head or at the patient's side, vertically or horizontally.

It has a one-piece, ovoid, hinged design for easy patient set-up.

To reduce patient motion artifacts the SENSE Wrist coil 8 includes a rigid base plate to fixate the coil.

100324 Achieva XR

Line #	Part #	Description	Qty	Each	Price
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Features:

- Maximum SENSE factor of 8
- Outside coil dimensions 210 x 570 x 500 mm
- Compatible with all RF platforms with 8 or more channels on 1.5T

8 ****NMRA975 SENSE Shoulder 1.5T 8 1**

The SENSE Shoulder coil 1.5T has 11 elements for use with 8-channel platforms, dedicated to high resolution shoulder imaging. The coil gives uniform signal throughout the shoulder joint with deep penetration into the labrum. The coil consists of a base-plate and an adjustable shoulder cup. The coil's design enables the operator to raise and pivot the cup relevant to the base-plate, ensuring a comfortable fit for different patient sizes.

Features:

- Compatible with a 8-channel or higher RF platform on 1.5T

9 ****NMRA715 SENSE Flex-L coil 1.5T 1**

The **SENSE Flex L coil** is a general-purpose coil that consists of two flexible elements. The shape and size of this large flexible coil enable a wide variety of applications including brain imaging, brachial plexus, pediatric chest and pediatric abdominal imaging, pelvis imaging, hip imaging and cardiac imaging. This coil can be combined with the SENSE Spine coil for total neuro examinations covering head and spine.

Features:

- Maximum SENSE factor of 2
- Aperture 17 cm
- Outside coil dimensions (hwxwd) in mm 90x300x650
- Compatible with all RF platforms with 4 or more channels on 1.5T

10 ****NMRA731 DOCUMENTATION FOR VA 1**

11 **SP059B Universal Power Supply 1**
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OPTIONS

SELECTION OF ANY OPTION WILL INCREASE THE CONTRACT PRICE BY THE AMOUNT SHOWN IN THE PRICE COLUMN. OPTIONAL EQUIPMENT PRICING VALID ONLY IF PURCHASED IN CONJUNCTION WITH EQUIPMENT QUOTED.

Line #	Part #	Description	Qty	Each	Price	Initial
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1	**NMRB198	SmartExam Pack Neuro	1			_____
		SmartExam Pack Neuro				

SmartExam uses Philips-exclusive technology to enable completely automatic planning of examinations. With SmartExam, studies can be consistently reproduced with optimized scan quality independent of patient, positioning and operator.

This package includes:

- SmartExam Brain
- SmartExam Spine

SmartExam Brain

SmartExam Brain enables automatic planning of head examinations.

With SmartExam Brain, all head studies can be consistently reproduced with optimized scan quality independent of patient, positioning and operator.

SmartExam Spine

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:

- The patient will spend less time in the system.
- The physician gets reproducible, consistent clinical results independent of operator.
- The operator can focus on managing patient throughput.
- The administrator gets increased efficiency and throughput and the practice becomes easier to staff and train.

2	**NMRB199	SmartExam Pack MSK	1			_____
		SmartExam Pack MSK				

SmartExam uses Philips-exclusive technology to enable completely automatic planning of examinations. With SmartExam, studies can be consistently reproduced with optimized scan quality independent of patient, positioning and operator.

This package includes:

- SmartExam Knee
- SmartExam Shoulder

OPTIONS

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SmartExam Knee

With SmartExam Knee, knee studies can be consistently reproduced even with challenging studies (metal implants). The preferred planning for imaging the right knee can be used for the left knee and vice versa.

SmartExam Shoulder

With SmartExam Shoulder, shoulder studies can be consistently reproduced. The preferred planning for imaging the right shoulder can be used for the left shoulder and vice versa.

SmartExam seamlessly integrates with ExamCards, enabling automatic planning, scanning and processing of complete patient studies with a single mouse-click.

SmartExam ensures:

- The patient will spend less time in the system.
- The physician gets reproducible, consistent clinical results independent of operator.
- The operator can focus on managing patient throughput.
- The administrator gets increased efficiency and throughput and the practice becomes easier to staff and train.

3	**NMRB090	SPECTROSCOPY SPECIALIST	1	
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The 1H Spectroscopy Specialist package includes a complete range of single voxel, multi-voxel and multi-slice proton spectroscopy acquisition methods. All acquisition techniques are automatically executed by ExamCards.

Key features:

- ExamCard-based spectroscopy acquisition:
 - Fully integrated into the acquisition user interface
 - Planning on survey images including free angulations of spectroscopic volumes
 - Easy scanning, planning and reconstruction
- Short TE spectroscopy with STEAM volume selection (minimum TE < 10 ms)
- PRESS volume selection
- 2D, Multiple 2D and 3D spectroscopic imaging
- SENSE 2D and SENSE 3D Spectroscopic imaging
- 2D and 3D Turbo Spectroscopic Imaging
- Combination of Turbo Spectroscopic Imaging and SENSE to even further reduce acquisition time
- Anisotropic matrix to reduce scan time
- Automated water suppression and MOIST, a unique (adiabatic) water suppression technique which is insensitive to B1 and T1.
- Dynamic single voxel spectroscopy
- Multiple REST slabs suppression, including circular REST
- Can be used for any anatomy
- Can be used with any coil

SpectroView:

The SpectroView Analysis package enables visualization and processing of all spectroscopic data in just a few mouse-clicks.

Key features:

OPTIONS

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Line #	Part #	Description	Qty	Each	Price	Initial
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- SpectroView data processing and viewing environment enabling presentation of spectro data after processing in the form of:
 - Graphs
 - Tables
 - Ratio and metabolite images in color overlay
 - Grids on reference images including corresponding spectra
 - Processed and fitted spectra
 - Metabolic peak levels

All data created can be transferred via DICOM to PACS or other workstations and all results can be converted to Windows-compatible formats.

4	**FMR0032	Patient trolley frame	1			
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The Patient Trolley Frame is a stainless steel frame with four wheels for easy transportation of the patient positioned on the system's tabletop. It allows preparation of a patient outside the examination room whilst the previous patient is being scanned. This greatly enhances the system's throughput potential. Non-ambulatory patients can be lifted directly from the hospital bed or wheelchair onto the scanner's tabletop without the need to first move them onto a non-magnetic stretcher and subsequently transfer them onto the scanner's tabletop. The patient trolley also allows swift evacuation of patients out of the examination room in case of emergency. This can eliminate the constraints of patient resuscitation near the magnet.

Features:

- Lightweight stainless steel frame
- Easy manoeuvring and docking

5	**NMRA896	Interventional monitoring package	1			
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The interventional monitoring package enables in-room real-time MR imaging, to support interventions like breast biopsy. The package consists of an examination room display and the real-time interactive software package.

The Examination Room Display is a special RF shielded high-brightness/high resolution LCD screen, which is wall-mountable

Features:

- High brightness/high resolution 18" LCD screen
- Wide viewing angle
- Fully MR compatible

Real-time interactive imaging provides the imaging techniques and user interface elements for fluoroscopic MR imaging. Real-time interactive fully utilizes FreeWave's processing and reconstruction power.

Features:

OPTIONS

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Line #	Part #	Description	Qty	Each	Price	Initial
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- Full interactive real-time adjustment of scan geometry and imaging parameters including:
 - In- or through-plane slice translation
 - Slice rotation around any axis
 - Slice positioning from three landmarks
 - Flip angle, FOV, Slice Thickness and Phase encoding axis
 - Gating trigger delays
 - Pre-pulse selection and delays
- Compatible with all rapid imaging methods including FFE, TFE, TSE and GRASE

6	**NMRA111	Examination room display trackball and arm	1			_____
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The Examination Room Display can be combined with a trackball and arm, providing extensive scanner control possibilities with immediate operator feedback within the examination room. The Examination Room Display is suspended from the examination room ceiling. This can be moved freely for optimum visibility and operator convenience*. The trackball provides an integrated control to access all mouse-operated functions. It enables the operator to conduct scan setup, planning, scanning, viewing and hardcopy reporting from within the examination room. Output is synchronized with the Operator's Console. It can be combined with the Interactive Package to enable real-time adjustment of slice position and contrast with full fluoroscopic and Interventional possibilities.

Features:

- Allows extensive control with direct feedback in the examination room
- Balanced swivel arm
- Track ball and mouse buttons in the base of the monitor
- Ergonomically designed

*Dependent on the field strength, the arm cannot be used in extreme proximity of the magnet.

7	**NMRA114	Patient observation camera	1			_____
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The Patient Observation Camera is a black & white camera that can be mounted at any convenient position within the examination room to visually monitor the patient, or outside the examination room, e.g. as a surveillance camera for the prep room or the waiting area. The images are displayed on the Patient Observation Monitor (ordered separately) in the scanner control area.

Features:

- MR compatible camera
- High image quality
- Easy mounting to walls or ceiling

8	**NMRA113	Patient observation monitor	1			_____
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OPTIONS

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Line #	Part #	Description	Qty	Each	Price	Initial
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Images from the Patient Observation Cameras can be displayed on a black & white Patient Observation Monitor positioned at a convenient location in the scanner control area. The monitor provides full visibility of the patient in all situations that require continuous visual monitoring, e.g. pediatric examinations and cardiac stress tests, as well as monitoring of patient setup and waiting areas.

Features:

- High brightness color LCD monitor
- Tilt, swivel and height-adjust for an ideal viewing position

9	**NMRA057	Accessory cart	1			
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This Intera style cart can be used to store consumables (earplugs, contrast media, wedges, sandbags etc.) and has a bottom drawer that can be used for disposed material. The height of the cart is such that next to the patient table it can be used to support the arm for contrast studies. The cart has two lockable wheels. The top of the cart can be removed so that it can be cleaned easily. The cart will be delivered pre-assembled.

Features:

- 3 drawers for miscellaneous accessories
- non magnetic can be moved close to the magnet
- easy to clean removable top

Benefits:

- Facilitates contrast administration

10	**FMR0301	RF Coils Cabinet	2			
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Cabinet for storing RF coils and accessories. Compatible with all Ingenia, Achieva, Intera and HFO systems.

11	**989801270041	Spectris Solaris EP Injector	1			
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The MEDRAD Spectris Solaris EP MR injection system offers Enhanced Performance capabilities designed for use with scanners up to and including 3T with uncompromised ease of use and more flexibility than ever before. The injector delivers precisely timed injections for performing contrast enhanced MR exams to include, MRA, Dynamic and functional procedures with consistent and reproducible results.

Key features include:

- 3T compatibility
- Enhance performance battery with increased injections per fully charge battery
- Optional integrated Continuous Battery Charger (iCBC) increases operator efficiency by not having to change out the battery
- Fiber optic cable enables direct, reliable communication.
- Six user- programmable phases for added programming flexibility
- Hold or Pause phases for programming delay type and time.
- Keep- Vein- Open (KVO)- Function maintains line patency. KVO function operates independently from the injection profile.

100324 Achieva XR**OPTIONS**

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Line #	Part #	Description	Qty	Each	Price	Initial
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- Large 115 ml syringe holds sufficient saline for longer KVO and multiple injections.
- Continuous status display on optimized color touch screen.
- Disposable syringe set SSQK 65/115vs.
- One- year warranty.
- Installation included in purchase of injection system.
- Applications Training included with purchase of injections system.

Control room unit

- Dimensions (H x W x D):
- 279 mm x 305 mm x 267 mm •
- (screen in up position)

Integrated Continues Battery Charger (iCBC)

- iCBC provides maximize operator flexibility by not having to change battery
- Flexible installation, in-room or out-of-room

Battery charger

- Dimensions (H x W x D):
- 40 mm x 77 mm x 129 mm

Scan room unit

- Dimensions (H x W): 1327 mm x 489 mm x 546 mm
- Volume Syringe A: 0.5 ml to max. syringe volume in 0.1 ml increments between 0.5 and 31 ml, 1 ml increments for 31 ml and above
- Volume Syringe B: 1 ml to max. syringe volume in 1 ml increments
- Flow rates: 0.01 to 10 ml/s in 0.01 ml/s increments between 0.01 and 3.1 ml/s, 0.1 ml/s increments for 3.1 ml/s and above
- Pressure limitation: 325 psi

12	**989801270017	EVERYDAY TASK CHAIR-DARK GREY	2			_____
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13	**989801271099	MR Stereo New	1			_____
This compact desktop audio system is designed to provide music for patient comfort during MRI scans. The unit provides the required audio output compatible with Philips MRI connections and RF filter requirements. This audio system includes a CD player and input options to connect other audio devices.						