Technical Data Sheet
_SR_ Pulse 710
1.5T Wide-Bore MRI

The SR Pulse 710 is a whole body 1.5 Tesla MRI system that lowers the bar of affordability for wide bore MRI. It includes 33 mT/m gradients, 16 channel RF system for head to toe imaging with 5 - 50 cm fields of view. The 71 cm bore diameter and 250 kg (550 lbs.) patient table weight limit provides a comfortable scanning environment for claustrophobic or very large patients.

The SR Pulse 710 is equipped with multi-element coil arrays, built into the tabletop and selected through programmed protocols, reducing the need for time-consuming repositioning. The intuitive user interface offers protocols that maximize image quality, optimize efficiency and ensures reproducibility with very high throughput potential.

The SR Pulse 710 was engineered by an R&D team with over 20 years of experience, and is manufactured in Solon Ohio.

Technical Data

Magnet system

Type	Superconducting
Main Field	1.5 Tesla
Shim method	Passive and 3-channel active
Shielding	Active magnetic
Patient aperture	71 cm
Max FOV	50 x 50 x 50 cm
Min FOV	5 x 5 x 5 cm
Fringe field (5 Gauss line)	3.78 x 2.87 m (axial x radial)
External dimensions (bare)	1740 x 2080 x 2415 mm (L x W x H)
External dimensions (with covers)	2012 x 2287 x 2537 mm (L x W x H)
Magnet Weight	5575 kg
Magnet Weight with covers, table	6993 kg
Temporal field stability (drift rate)	≤ 0.1 ppm/hour
Spatial homogeneity (VRMS)	0.5 ppm at 45 cm DSV
Cryogen type	Liquid helium
Liquid helium boil off rate	0.0 L per hour

Gradient system

Peak field strength	33 mT/m
Maximum slew rate	132 mT/m/ms
Rise time	0.25 ms
Shielding	Active

RF Transmit/Receive System

Resonance frequency	63.75 MHz ±100 kHz
Peak envelope power	18 kW
Peak transmit B1	24 µT
Number of RF receiver channels	16
RF preamplifier	Integral to each receive coil element
Preamplifier gain	26 dB ± 1 dB
Noise figure	< 0.5 dB

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Surface Coils

Integrated Body coil	Quadrature transmit, 2 channel receive
Head coil	Eight element, phased array, receive only
Spine coil	Sixteen element, phased array, receive only
Knee/Foot coil	Six element, phased array, receive only
Shoulder coil	Three element, phased array, receive only
Neck coil	Single element, receive only, combine with up to four elements of the head coil and seven elements of the Spine Coil
Head/Neck Vascular Array	Combine up to 16 elements from Head, Torso and Spine Coils
Wrist coil	Four element, phased array, receive only
Small torso coil	Four element, phased array, receive only
Medium torso coil	Eight element, phased array, receive only
Body Array	Combine up to 16 elements from Torso and Spine Coils
Large torso coil	Twelve element, phased array, receive only
Coil connection points	Three positions on patient table
Small Flex (flexible) coil	Four element, phased array, receive only
Large Flex (flexible) coil	Four element, phased array, receive only

Patient Comfort System

Patient pads	A set of 15 pads to support Head, Spine and extremities
Patient illumination	Indirect LED white
Patient ventilation	Fresh air blower, adjustable flow rate
Patient communication	Two-way patient-operator intercom with integrated stereo sound system Hand-held patient alarm system

Patient Table / Positioning System

Table type	Fixed
Maximum patient weight	250 kg (550 lbs.)
Table motion controls	Keypads located on front facade, both sides of table
Table top dimensions	2600 x 500 mm (L x W)
Vertical range	560 - 935 mm
Vertical speed	15 mm/s
Horizontal travel distance	2350 mm
Horizontal speed	179 mm/s
Horizontal positioning accuracy	± 0.5 mm
Patient positioning features	Laser marker for alignment in axial and sagittal reference planes

Computer system

Host computer CPU	Intel® Xeon® Quad processor
Main memory	≥ 24 GB
Storage devices	≥ 500 GB hard drive (application software / image database)
DVD-RW for image archival	yes
Display monitor	24” LCD, 1920 x 1200 resolution
Image reconstruction CPU	Intel® Xeon® 8-core processor (two per system)
Image reconstruction memory	≥ 64 GB
Base operating system	Microsoft® Windows® 7 Professional 64-bit
Application software	Swissray graphical user interface
Operator’s console functions	Patient registration, scan setup, scan control, image review, image post-processing, filming, archive, system startup/shutdown
Image reconstruction	1250 images per second
Film interface	DICOM 3.0 Print
Network image interface	DICOM 3.0 Storage (as Service Class User)
Information system interfaces	DICOM 3.0 Modality Worklist (as Service Class User) DICOM 3.0 Performed Procedure Step (as Service Class User)

Subject to technical modification
Our units and equipment must only be installed, serviced and put into operation by Swissray authorized personnel.

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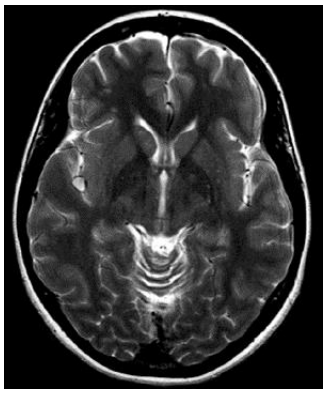
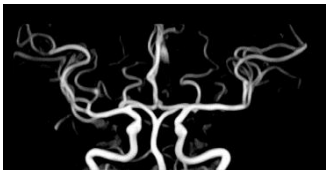
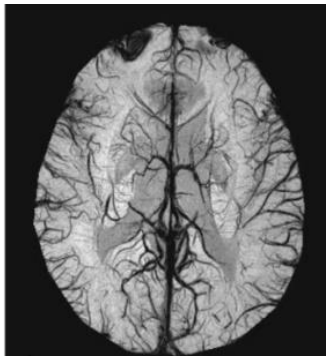
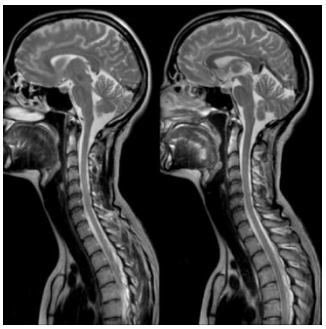
Clinical Protocol Package	**v4.0 software**
Type	T1/T2/PD Spin Echo (SE) T1/T2/PD/ 2D Fast Spin-Echo (ETL 1-128) T2 2D SSFSE T2 3D SSFSE T1/T2/PD 3D Fast Spin-Echo (ETL 1-512) FLAIR 2 PT Dixon FSE and GRE(In / Out Phase / Water / Fat) VFASSFSE (Variable FA SS FSE) FSE Linear Rotate K-Space T1/T2* 2D Spoiled Gradient-Echo T1/T2* 3D Spoiled Gradient-Echo TOF 3D Spoiled Gradient Echo DW EPI 2D Up to 21 directions and 5 B-Values SSEPI for Dynamic Susceptibility Contrast (DSC) Susceptibility Weighted Imaging (SWI) Diffusion Tensor Imaging (up to 24 directions) Magnetization Transfer Contrast (MTC) Fat Suppression (Spectral) Flow Compensation (FC) TONE Ramped RF pulse Inversion recovery (IR) Walking pre-saturation User Defined static pre-saturation Single Station CEMRA Interleave Psats Mini-Pilot Slice Grids Adiabatic IR Pulses 2D/3D MRCP ESPIRiT – Parallel Imaging (compatible with all coils) Snap to ISO scanning 3D Volume Shimming Remote Table Movement Stitching software In-Line Filters (Contextvision)

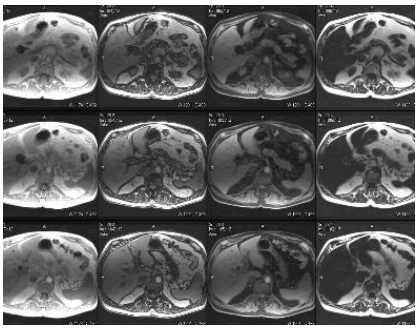








16 Channel HNV Array
Combine up to 16 elements from
Head, Torso and Spine Coils



2 PT Dixon (In Phase / Out Phase/ Water and Fat)
FSE or GRE

6 Channel Knee/Foot Array

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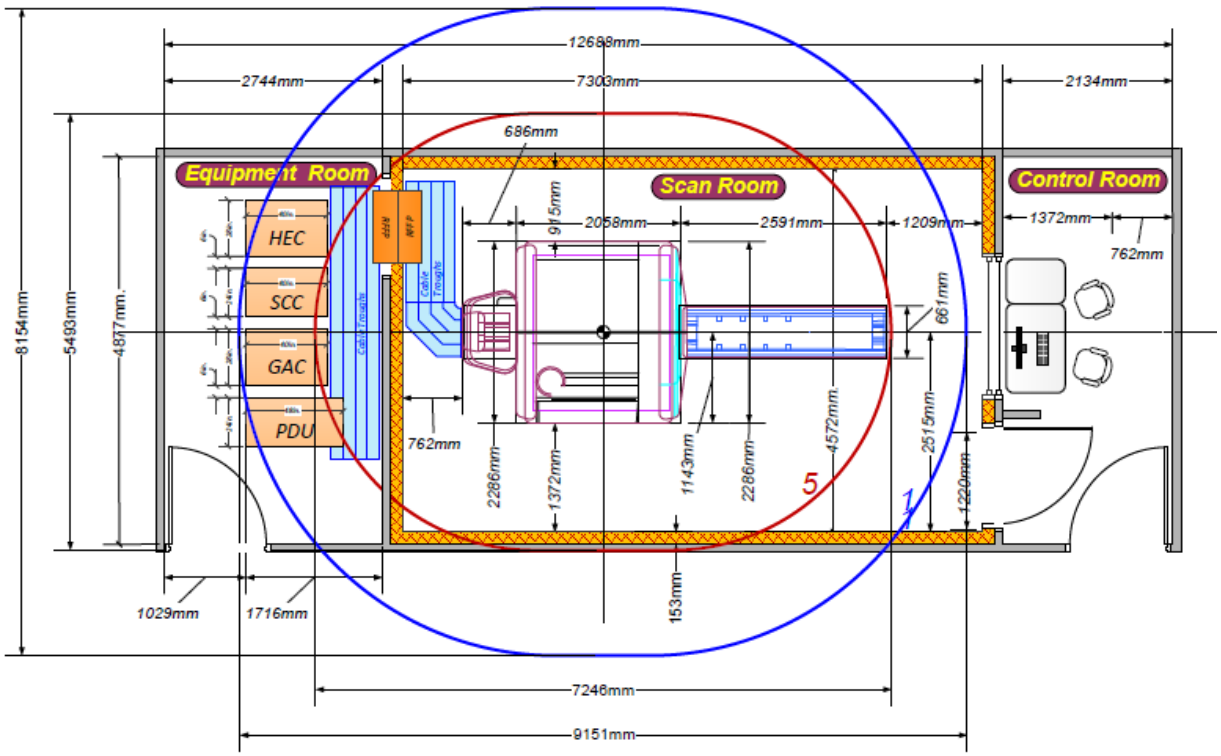

Installation

Overall gantry dimensions (including covers) (W x H x L)	7'6" x 8'4" x 6'9" (2286 x 2540 x 2058 mm)
Minimum ceiling height, magnet room	9'67" (2.95 m)
Extent of fringe field (0.5 mT, 5 gauss)	2.87 x 2.87 x 3.78 m (x, y, z)
Total operational weight (magnet with covers, patient table)	6993 kg (15,418 lbs)
Minimum dimensions of opening for installation (W x H)	8' x 8'10" (2440 x 2690 mm)
Minimum installation for magnet	35.7 m^2 (384 ft^2)
Minimum total installation for system (magnet, scan and control rooms)	61.88 m^2 (672 ft^2)
Total number of cabinets required	4 cabinets

Power

Line voltage	480, 460, 440, 420, 400, 380 VAC
Operational	36.6 kVA
Standby	11,3 kVA
PDU Capacity	107 kVA

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