Multiplelabs
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Analytical®
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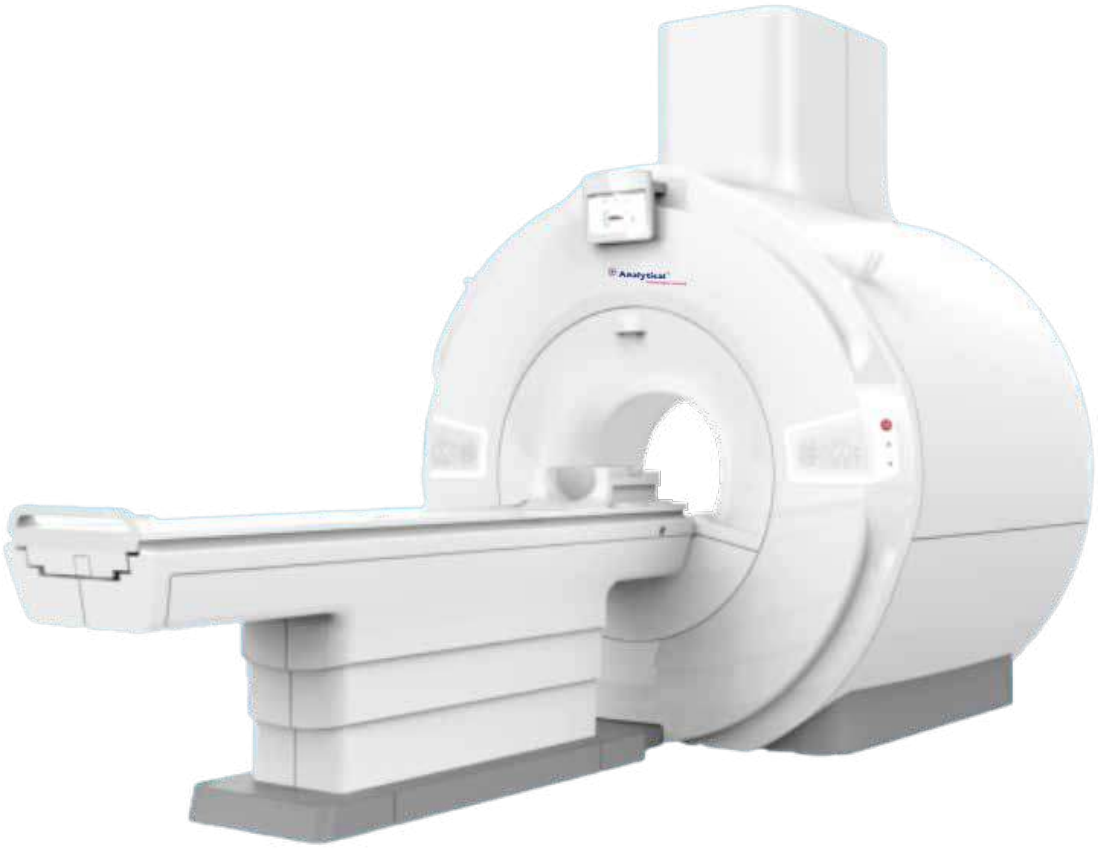
Astar - 3000

Magnetic resonance imaging MRI System



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

Analytical Technologies Limited

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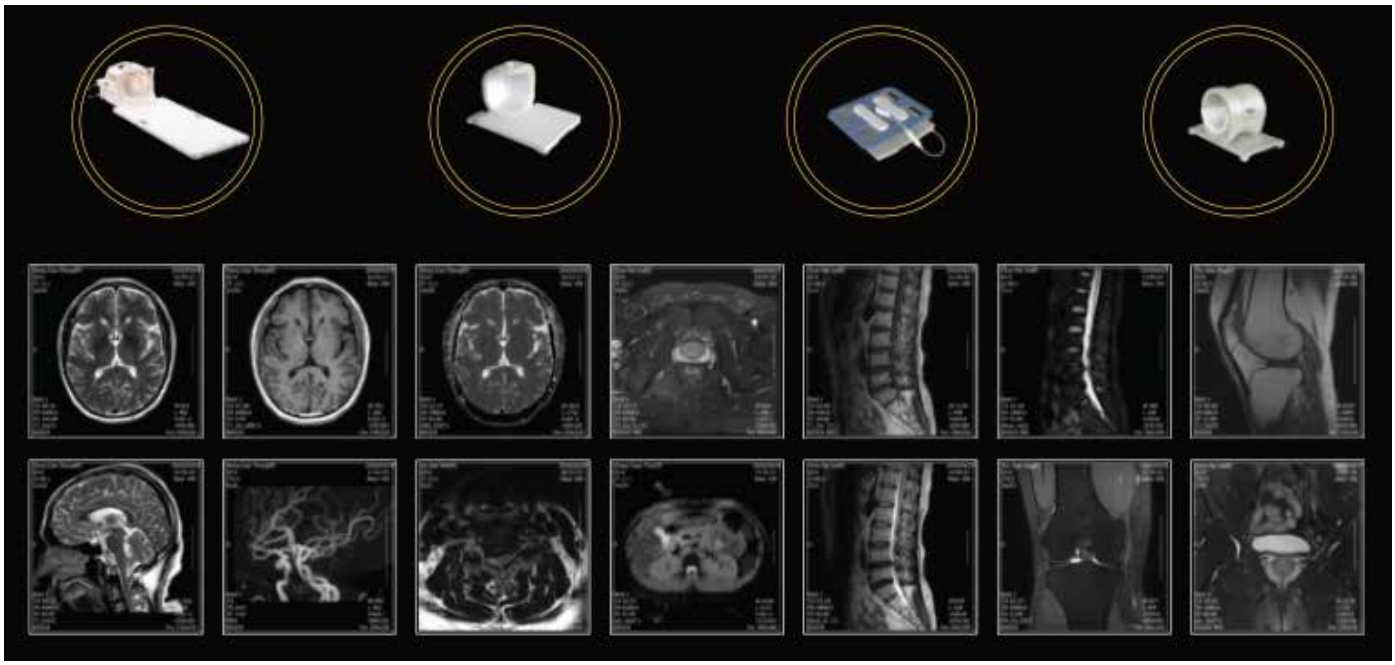
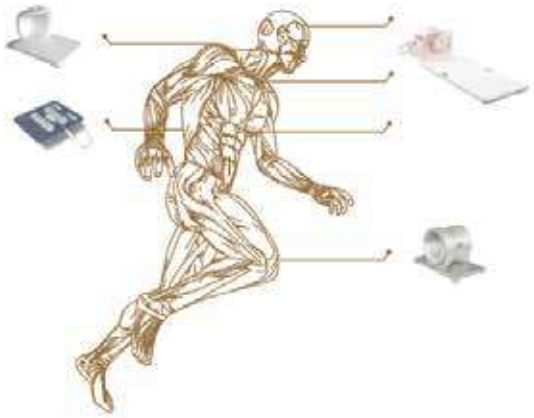
3.0T Superconducting System



Receiver Coils



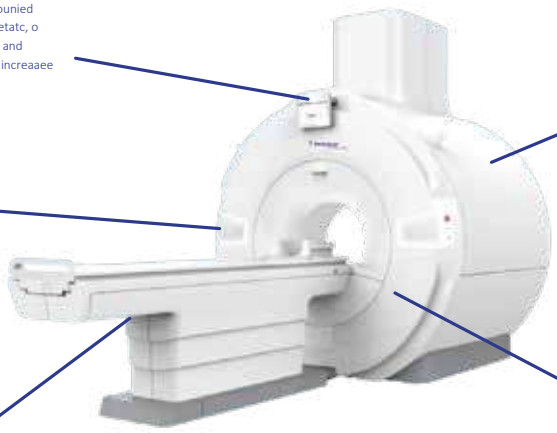
System Environment

MRI 3000
Superconducting system

The wart conrol saeen mounied on the gilry. helpe the opetatc, o confirm the table poiition and patl1t elatul In real4âme, increaaee the daily pebent flow.

Golden-ratio design magnet. A long magnet will make the patient feel depressed during examination while a short magnet will greatly decrease the homogeneity. The "golden-ratio" design magnet is the elegant balance between both.

Dual side operation panel,
The operator can operate the System at both sides of the magnet
Saves the positioning time,
Increases the daily patient flow.



MRI design is inspired by sapphire, which is a transparent armor material for military vehicle. The hardness of sapphire is stronger than any other natural materials except diamond. It is a symbol of the practical performance and sound quality.

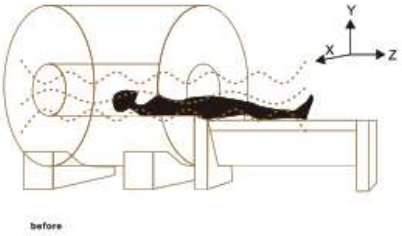
With high accuracy diagnosis automatic bed design and intelligent speed control, it has greatly improved patient comfort as well as patient flow.

RF SUB SYSTEM

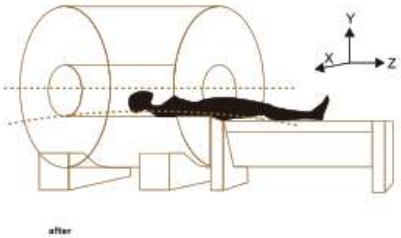
Full digital spectrometer, provides high performance signal transmit and receive.

ADVANCED GRADIENT TECHNOLOGY

According to different patient and environment, grants best B0 field, improve fat-sat images



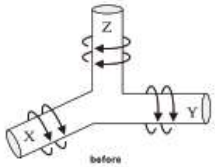
before



after

EDDY-ZERO TECHNOLOGY

Helps improving the quality of IR sequences.



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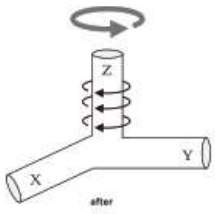

after

Intelligent water chiller system, balance the power cost.

TECHNICAL SPECIFICATIONS

No.	Item	Specification
One	Equipment Introduction	
1	Use	For all parts of the body MRI Scan
Two	Magnet System	
1	magnetic field Strength	3.0T
2	Center frequency	127.7MHz
3	Magnet Type	Superconducting Magnet
4	Magnet Material	Niobium-titanium alloys
5	Anti-electromagnetic interference	Yes
6	Magnet stability	0.1 ppm/h
7	Uniformity of magnetic field	Typical values, V-RMS measurements
7.1	10cm DSV	0.005ppm
7.2	20cm DSV	0.027ppm
7.3	30cm DSV	0.056ppm
7.4	40cm DSV	0.250ppm
7.5	45cm DSV	0.460ppm
7.6	50cm DSV	1.500ppm
8	Compensation technology of magnetic field shimming	Yes
9	Shim mode	Active uniform field + passive leveling
10	Magnet weight (with liquid helium)	4600kg
11	Magnet length (excluding shell)	160cm
12	Patient aperture.	60cm
13	Cooling mode	Liquid helium
14	Liquid helium consumption rate	0
15	Volume of liquid helium	1450L
16	Cold head Type	4K Cold Head
17	5 Gauss line range	3.1m x 3.1m x 5.5m
Three	Gradient System	
1	Gradient Control Technology	Full digital real Time
2	Gradient Cooling Mode	Water
3	Maximum gradient intensity	46mT/m
4	Maximal gradient slew rate	288T/m/s
5	Minimum gradient rise time	0.159ms

6	Maximum gradient field, maximum gradient switching rate and maximum FOV can be achieved simultaneously	Yes
7	Max duty ratio	100%
8	Shielding mode	Active shielding
9	Gradient working mode	Non-resonant type
10	Gradient Noise Reduction Technology	Yes
Four	RF System	
1	Number of independent RF sources	1 or 2
2	Number of independent RF amplifiers	1 or 2
3	Each RF source can independently adjust the RF pulse phase, waveform, amplitude	Yes
4	RF Transmitter Power	35kW or 18kW * 2
5	Max RF transmit field	20μT
6	RF Power Amplifier Type	Water-cooled / Digital Interface
7	Transmitter Coil auto tuning	Yes
8	Number of independent RF channels	16 / 32
9	RF Receiver Sampling rate	100MHz
10	Receive dynamic range (1Hz bandwidth)	140db
11	Noise coefficient	0.5dB
12	Full digital demodulation and filtering technology	Yes
13	RF Energy Monitoring	
13.1	Real-time digital RF energy Monitoring	Yes
13.2	Real-time digital RF energy accumulation monitoring	Yes
13.3	Real-time digital RF energy accumulation monitoring	Yes
14	RF receiver coils and related technologies	
14.1	Orthogonal transmitting / receiving	Yes
14.2	Head-neck coils	24 Channel
14.3	Body Coil	12 Channel

14.4	Spine Coil	18 Channel
14.5	Large Flexible Multi-function coil	8 Channel
14.6	Breast Dedicated coil	8 Channel
14.7	Knee Dedicated coil	8 Channel
14.8	Shoulder Dedicated coil	Optional
14.9	Ankle Dedicated coil	Optional
14.10	AIT Scanning technology	Yes
14.11	Note: coil configuration is subject to the final contract	
Five	Computer	
1	CPU	3.4GHz
2	Number of processor digits	64bit
3	Memory capacity	8GB
4	Hard disk capacity	500GB
5	Image storage capacity (512 matrix)	0.6million
6	Display resolution	1920 x 1200
7	Display size and specifications	24 inch
8	Maximum acquisition matrix	1024 x 1024
9	Maximum Reconstruction matrix	1024 x 1024
Six	Post-processing interface	
1	Software Control camera Technology	Yes
2	DICOM 3.0 interfaces and PACS network connections (including print, transmit, receive, query , worklist, MPPs)	Yes
3	Standard Laser Camera Digital interface	Yes
Seven	Scan parameters	
1	X axis Max FOV	500mm
2	Y axis Max FOV	500mm
3	Z axis Max FOV	500mm
4	Minimum FOV	5mm
5	Thinnest layer thickness	0.1mm
6	2D SE Shortest sequence TR time (128 matrix)	7ms
7	2D SE Shortest sequence TE time (128 matrix)	2.4ms
8	2D FSE Shortest sequence TR time (128 matrix)	7ms
9	2D FSE Shortest sequence TE time (128 matrix)	2.4ms
10	2D FSE Sequence minimum echo spacing (128 matrix)	2.4ms

11	2D FSE sequence maximum echo chain length (ETL)	512
12	2D GRE Shortest sequence TR time (128 matrix)	1.0ms
13	2D GRE Shortest sequence TE time (128 matrix)	0.6ms
14	3D GRE Shortest sequence TR time (128 matrix)	1.2ms
15	3D GRE Shortest sequence TE time (128 matrix)	0.5ms
16	EPI Sequence minimum echo interval (128 matrix)	0.57ms
17	EPI Shortest sequence TR time (128 matrix)	4.7ms
18	EPI Shortest sequence TE time (128 matrix)	1.3ms
19	Maximum dispersion weighted b value	10000
Eight	Scanning technology and sequence	
1	Spin echo sequence (FSE)	Yes
1.1	2d/3d Fast spin echo	Yes
1.2	SE sequences measured by tissue relaxation time	Yes
1.3	SE sequences with selectable angles	Yes
1.4	Single echo, dual echo and multi-echo technology	Yes
1.5	Single excitation fast spin echo sequence	Yes
1.6	Fat-sat sequence	Yes
1.7	Fast Fat saturation Technology	Yes
1.8	Water-sat sequence	Yes
1.9	Reverse recovery (IR)	Yes
1.10	General IR sequence	Yes
1.11	FLAIR	Yes
1.12	Fast T1-FLAIR	Yes
1.13	Fast T2-FLAIR	Yes
1.14	Rapid inversion recovery sequence (fat-sat, water-sat)	Yes
1.15	Short TI inverse echo water-fat separation imaging	Yes

1.16	"True" inversion recovery sequence (contrast imaging of gray-white matter)	Yes
2	Gradient echo (2d/3d), including	Yes
2.1	Multi-layer gradient echo	Yes
2.2	2d/3d residual magnetization removal gradient echo technology	Yes
2.3	2d/3d residual magnetization gradient echo technology	Yes
2.4	Heavy T2 weighted High Contrast sequence	Yes
2.5	3D Gradient Echo Technology	Yes
2.6	Fast steady-state progressive gradient Echo	Yes
2.7	Super-fast field echo sequence	Yes
2.8	Three-dimensional imaging technology	Yes
3	Planar echo imaging (EPI)	Yes
3.1	Single-excitation planar echo imaging technology	Yes
3.2	Multi-excitation planar echo imaging	Yes
3.3	Spin echo EPI	Yes
3.4	Gradient echo EPI	Yes
3.5	Reverse EPI	Yes
3.6	High resolution EPI Collection	Yes
4	Neuroimaging technology	Yes
4.1	High resolution anatomical imaging	Yes
4.2	High resolution three-dimensional imaging technology of inner ear	Yes
4.3	Full Spinal cord imaging	Yes
5	Diffusion imaging technology	Yes
5.1	ADC Imaging	Yes
5.2	Isotropic acquisition	Yes
5.3	Anisotropic acquisition	Yes
5.4	ADC Value Measurement	Yes
5.5	ADC-map	Yes
5.6	Automatic acquisition and processing	Yes
5.7	Single-shot EPI	Yes

5.8	Multi-shots EPI	Yes
5.9	Real-time diffusion imaging	Yes
5.10	Automatically generate ADC diagram	Yes
5.11	Optional optimization B value	Yes
6	Vascular imaging technology	Yes
6.1	Time Of Fly Technology (2d/3d)	Yes
6.2	Imaging technology of arteriovenous separation	Yes
6.3	MTC technology	Yes
6.4	Maximum density projection technology	Yes
6.5	Variable reversal Angle RF technology	Yes
6.6	MIP	Yes
6.7	2d/3d Water Imaging Technology (MRCP, MRU)	Yes
6.8	Real-time interactive MIP	Yes
7	Artifact removal technology	Yes
7.1	Fluid compensation	Yes
7.2	Respiratory compensation	Yes
7.3	Flow correction	Yes
7.4	Regional saturation Technology	Yes
7.5	Deconvolution Artifact Removal technology	Yes
7.6	Motion Artifact Elimination technology	Yes
7.7	Image filtering Enhancement technology	Yes
7.8	K Space Noise Reduction technology	Yes
7.9	Ring artifact suppression	Yes
8	Section-scan technology	Yes
8.1	Semi-scanning technology	Yes
8.2	Full directional partial coding acquisition technology	Yes
8.3	Rectangular FOV acquisition technology	Yes
8.4	Three-dimensional overlapping continuous acquisition technology	Yes
8.5	Parallel acquisition and reconstruction technology	Yes

8.6	Partial echo Acquisition	Yes
9	Other imaging technology	Yes
9.1	Short TR TE Fast Imaging	Yes
9.2	Three-dimensional positioning system	Yes
9.3	Positioning technology of radial slice layer	Yes
9.4	Scan pause	Yes
9.5	Variable Bandwidth technology	Yes
9.6	Pre-scanning technology	Yes
9.7	Signal noise ratio display function	Yes
9.8	Mute Scanning technology	Yes
9.9	Real-time interactive imaging	Yes
9.10	Real-time localization	Yes
9.11	Real-Time Interactive parameter change	Yes
9.12	High Resolution imaging	Yes
9.13	Combined scan function	Yes
9.14	Water Saturation Technology	Yes
9.15	Pre-saturated technology	Yes
9.16	Maximum saturation zone number	3
9.17	Parallel saturation Zone	Yes
9.18	Adjoin saturation Zone	Yes
9.19	Fat saturation Technology	Yes
9.20	Signal averaging technology	Yes
9.21	Frequency Coding Direction Extended acquisition	Yes
9.22	Phase coding direction expands acquisition	Yes
9.23	Partial Center scanning technology	Yes
9.24	Variable K space Filling method	Yes
9.25	K Fast Space Acquisition	Yes
9.26	Coil Sensitivity correction technology	Yes
9.27	Enhancement technology	Yes
9.28	Correction technology of image luminance uniformity	Yes
9.29	Automatic Center Scanning technology	Yes
9.30	Image reconstruction Technology	Yes
9.31	Image interpolation Amplification Technology	Yes

9.32	Image Distortion Correction Technology	Yes
10	Advanced clinical application packages	Yes
10.1	Neuro Imaging software Package	Yes
10.2	Body Imaging software Package	Yes
10.3	Bone and joint imaging software Package	Yes
10.4	Tumor Imaging software Package	Yes
10.5	Breast Imaging software Package	Yes
Nine	The patient examine environment	
1	Two-way patient call system	Yes
2	Magnetic noise-reducing headphones	Yes
3	Aperture Ventilation system	Yes
4	Aperture lighting system	Yes
5	Embedded display	Yes
5.1	Patient monitoring System	Yes
5.2	Bedside Patient Control system	Yes
6	Patient Emergency call Device	Yes
7	Maximum load bearing of inspection bed	200KG
8	Minimum bed height for inspection beds	62cm
9	Maximum speed of horizontal motion of scan bed	20cm/s
10	Scan bed Length	245cm
11	Maximum scanning range	>150cm
12	Multi-station stitching	Yes
13	Bedside Emergency brake button	Yes
14	Bedside Switch	Yes
15	Breath gating	Yes

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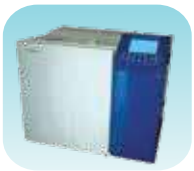
Infra FTIR

Optima Gas Chromatograph 3007



Optima Gas Chromatograph 2979 Plus

Flash Chromatograph

Atomic Absorption Spectrophotometer

Liquid Partical Counter

Optical Emission Spectrophotometer

DSC/TGA

Semi Auto Bio Chemistry Analyzer

HEMA 2062 Hematology Analyzer

Micro Plate Reader/Washer

URINOVA 2800 Urine Analyzer

Total Organic Carbon 3800

Fully Automated CLIA

NOVA-2100 Chemistry Analyzer

PCR/Gradient PCR/ RTPCR

TOC Analyzer

Laser Particle Size Analyzer

Ion Chromatograph

Water purification system

Regulatory compliances

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3. ANALYTICAL FOUNDATION aims to DETOXIFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

Analytical®
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HPLC Solutions MultipleLabs Analytical Bio-Med Analytical Distributors Analytical Foundation (Trust)

Corporate & Regd. Office:
Analytical House, # E67 & E68,
Ravi Park, Vasna Road, Baroda,
Gujarat 390 015. INDIA

T: +91 265 2253620
+91 265 2252839
+91 265 2252370
F: +91 265 2254395

E: info@hplctechnologies.com
info@multiplelabs.com
info@analyticalgroup.net
info@analyticalbiomed.com

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