ZAMÓWIENIE:

1)

Magnetic Resonance Imaging
MRI (3 Tesla) Big Bore 70
Magnet (Measured in Tesla)
3.0 T
Type: Closed
Imaging Parameters: Whole Body
Number of Channels: >/ 48

Gradient Strenght: >/ 40mT/m
Slew Rate: >/180 T/m/s
Minimum TE: </90ms
Minimum TE with parallel
imaging: </ 65ms
Cryogen Refill: One Refill
more than Four Years of Zero Boil Off
Patient Aperture: >/70
Centimeters
Table Weight Limit: >/ 200kg
(Fully motorized patient table)
Archival Device:
1. >/ 1 Tera
GB hard disk - >/ 400,000
images (256x256)
2. DVD-R/W
Image Reconstruction Time: >- 100 ips (image per second)
in 256x256 Malnx
FOX (Field of View) >/50 centimeters

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2)

CT Scanners >/ 128 slices
CLINICAL APPLICATION
Produce thin cross-sectional images of the human body for a wide varienty of diagnostic procedures.
Number of slics acquired simultaneously >/ 128

All electrical protection units i.e. (Phase failure, Phase synchronizer, Power circuit breaker … ect) must be supplied Printer:
- Laser printer dray film type, high-resolution
- >/ 6000 film must supplied with printer
- Can use different type of film Injector (Dual head):
- Certified of work on MRI environments of >/ three Tesla
- Automatic switchover from empty to full contrast agent container during the injection
- Comfort accessories for convenient handling
- Media transport Roil pump
- Suitable contrast media bottle sufficient for 6 month of operation

SURFACE COILS:
Standard: T/R-head, Body, Phased array, CTL spine: SENSE coils: Torso, Cardiac/abdomen, Head, Knee, Breast, Neurovascular, Flex M, Flex L, Neck with optional HNS other optional coils

PULSE SEQUENCES:
SE, Modifiels-SE, IR (T1, T1, PD), STIR, FLAIR, SPIR, FFE< T1-FFE, T2-FFE, Balanced FFE, TFE, Ballanced TFE, Dynamic, Keyhole, 3D, Multi Chunk 3D, Multi Stack 3D, K Space Shutter, MTC, TSE, Dual IR, DRIVE, EPI, Cine, 2DMSS, DAVE, Mixed Mode: Angiography, Inflow MRA, TONE, PCA, CE MRA SPECTROSCOPY – yes
SYNCHRONIZATION Cardiac gating, ECG/peripheral,
respiratory gating (2 models)
IMAGING MODES Single Slice 2D,
Multi Slice 2D, 3D, Multi Chunk 3D, Multi Stack 3D

Dual-energy acquisition NO
GANTRY
Gantru tilt, +/- 30
Gantry weight, kg <2,000
Gantry aperture, cm >/ 70
Scan localizer Laser X-RAY TUBE
Heat storage, MHU >/ 7
Heat dissipation rate, kHU/min >/ 1,000
Tube cooling Oil or water
Tube focal sports, mm 0.7 x 1
Expected tube life, scan (&calender) >/ 250,000
Max mA smallest tube spot 500
Max scan time at max mA, see 10

DETECTOR
Field of view (standard), cm Range >/ (5-50)
Field of view (extended), cm Range >/ (5-50)
Total detector wiwidth, z-axis, mm >/ 40
Reconstructed slice width options, mm Range >/ (0.4-10)
Optional minimym slice width, mm </ 0.3
Standard rotation times, sec, 360º 0.4-2
ADVANCED IMAGE ACQUISITION
Cardiac Yes
Nonsegmented reconstruction, msec 150'
Low-dose axial caediac yes
Perfusion imaging yes
Extended coverage perfusion yes

SLICE THICKNESS: </ 0.1 mm
Software Protection:
- No dingle or passwords
- Auto detect, calibrate and define all parts
- Standard moise and keyboard socket
- Easy to use: Heavy duty; compatible design
- Automatic Backup to use if software get damaged
Other specification
- Standard DICOM
- Highest patient active comfort technology
- More than two >/ 19” LCD or plasma monitor (displayer)
- Optional Malty vision external network station
- Suitable anesthesia machine
Certified for work on MRI environments of >/ three Tesla
- Sound pressure level (SPL) at peak gradient amplitude and slew rate, dB(A) < 99 with ear protection

INJECTORS, CONTRAST MEDIA Dual Head Preferred
Drive Mechanism According to manufacturer
Syringes
Disposable >/ 125mL >/ 1000 set starting kit
Reusable Preferred
Fluid heating
Flow range, mL/sec >/ (0.3-7)
DELIVERY PRESSURE RANGE, psi >/ (75-200)
SELECTABLE PRESSURE
ADJUSTABLE RISE TIME

ADJUSTABLE VOLUME STOP
(Automatic preferred)
Increments, mL </ 1
Sline Flush
SAFETY FEATURES According to manufacturer (pleas apecify
OPERATION ALERTS
SYNCHRINIZATION, x-ray,

Generator
CONTROLS TYPE According to manufacturer (please specifi)
Other Specificatin

X-RAY GENERATOR
kW output 80
kVp range 80 – 140
mA range 20-500
PATIENT TABLE
Vertical, cm
Longitudianal cm
Scannable range, cm
Max load capacity without restrictions, kg (accurancy, mm)

PATIENT TABLE
Vertical, cm
Longitudinal, cm
Scannable range, cm
Max load capacity without restrictions, kg (accuracy, mm)
PATIENT TABLE
Vertical, cm 40-100
Longitudinal, cm 150
Scannable range, cm 150
Max load capacity without restrictions, kg (accuracy, mm)
200-(+/- 0.25)
RADIATION DOSE

DETEctor: dual
Type According to manufacurer (please specified)
Dimensions (cm) >/ 20*20
Pizel size, µ</200x200
Max frame rate fps >/30

TABLETOP
Motion >/ 4-way floating
motorized movement
L x W, cm >- (220 x 45)
Movement
Vertical
Lateral
Longitudinal
Maximum patient weight, kg >/220
ROTATIONAL ANGIOGRAPHY

X-RAY GENERATOR
Power rating, kW @ 100 kVp >/ 100
Radiographic mA </10 - >/1000
Radiographic kV </50 - >/120
Fluoroscopic mA >/30

PA GANTRY:
Configuration According to manufacturer
Depth, cm >/90
Rotation range, deg
ROA projection >/90
LAO projection >/90
Rotation rate, deg/sec </25
Cranial-to-caudal angulation, deg >/ =/-45
SID range, cm >/85 - </125
Park capability
LA GANTRY:
Configuration According to manufacturer
Rotation range, deg LAO
projection >/ 0 to </ 120
Rotation rate, deg/sec >/8
Granial-to-caudal angulation, deg >/ +/-45
SID range cm 9in) >/80 - </140
Park canability

Pediatric-specific dose control – YES
Prospective ECG gatin – YES
Retrospective ECG editing – YES
Iterative image reconstruction – YES
Sliding collimation (overbeaming reduction) – YES
Superficial organ does reduction – YES
Axial cardiac – YES
Low-dose cardiac (axial acquisition) – YES
Max heart rate, bpm >/65
Arrhythmia correction – YES

CLINICAL APPLICATIONS AND FUNCTIONALITY
Coronary artery calcification scoring
Auto vessel mapping
Quantification
Ventricular outout
Myocardial evaluation
Lung nodule assisted reading
Lung nodule CAD
Lung function analisis

Fluorocsopic kV </60 - >/120 Full in-room control
X-RAY TUBE
Heat storage capacity, MHU >/5 (FOR HOUSING TUBE)
Heat dissipation rate, KHU/min >/ 500
Focal spot DUAL
Cooling system should be specified
SOFTWARE
3D Visualization, Quantification and Planning
Stent Visialization (live real-time)

Other (all manudacturer advance software should be supplied & clarified in details)
NUMBER OF MONITORS >/2
control room >/4 exam room
IMAGING FEATURES
Acquisition, fps
512 x 512 >/60
1024 x 1024 >/30

Line voltage 220/415, 3-phase, 50/60 Hz
Phase Synchronizer – YES
Voltage stabilizer – YES (170-260 VAC to 220/240 VAC stabilizing board or Device UPS (>/160 KVA) (Delta comparison typw) – YES
with >/60 minute power bank up for operationSystem (i.e. PC and its accessories) & (>/160 KVA) UPS for whole system
OTHER SPECIFICATIONS – Heavy duty & compatible design Printer Laser printer dray film type, high-resolution
- >/6000 film must supplied with printer (F.O.C.)
- can ude different type of film

Respiratory gating
Virtual colonoscopy assisterd reading
Virtual colonoscopy CAD
Vessel analysis (noncardiac)
Brain perfusion
Z-axis coverage for brain perfusion
Auto bone removal
Body perfusion <0.1
Highest achievable temporal resolution other Xenon perfusion, surgery, other applications\IMAGE RECONSTRUCTION
Computer CPU Advanced Workstation
Scan FOVs, cm 50
Reconstruction matrices >/ 512 x 512
Max reconstruction rate (512 x 512), ips >/20
Per slice, sec </0.2
Real-time partial image reconstruction – YES
Archival storage MOD, CD, DVD

POWER REQUIREMENTS
Line power 380-480 VAC, 50/60 Hz, 3-phase
UPS for whole system >/160 KVA

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Lin power 380-480 VAC, 50/60 Hz,3-phase
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INJECTORS, CONTRAST MEDIA
Single Head Preferred Drive Mechanism According to manufacturer
Syringes
Disposable >/125 mL >/ 1000 set starting kit
Reusable Preferred
Fluid heating
FLOW RANGE, mL/sec >/ (0.3 – 7)
DELIVERY PRESSURE RANGE,
psi >/ (75-200)
SELECTABLE PRESSURE
ADJUSTABLE RISE TIME
ADJUSTABLE VOLUME STOP
(Automatic preferred)
Increments, mL </1
SALINE FLUSH
SAFETY FEATURES According to manufacturer (please specify)

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3)

Biplane cath lab
TYPE: Biplane, digital flat-panel system
SPECIFIED USE: Cardiac catheterization, Angiography
Patent type: Adult & pediatric

EXPOSURE CONTROL
Virtual collimation
Adjustable copper filtration
Dose monitoring
IMAGE STORAGE >/ 50,000 for (1024 x 1024, images) >/ 50,000 for (512 x 512)
DIGITAL IMAGING SYSTEM – YES
Other specifications:
1 – Hemodynamic lab
2 – Contrast injector
3 – 3-D applications (please specify)
4 – All needed furniture, radiation protection shield, Aprons >/3 supplier responsibility
5 – Site preparation with decoration is supplier respondibility
Environmental requirements:
The equipment suitable for working in the climate conditions in Asia in terms of temperature and humidity

INJECTORS, CONTRAST MEDIA
Dual Head Preferred Drive Mechanism According to manufacturer
Syringes
Disposable >/ 125 mL >/ 1000 set starting kit
Reusable Preferred
Fluid heating
Flow range, mL/sec >/ (0.3 – 7)
DELIVERY PRESSURE RANGE, psi >/ (76 – 200(
SELECTABLE PRESSURE
ADJUSTABLE RISE TIME
ADJUSTABLE VOLUME STOP
(Automatic preferred)
Increments, mL </ 1
Sline Flush
SAFETY FEATURES According to manufacturer (please specify)
OPERATOR ALERTS SYNCHRONIZATION, X-ray
Generator
controls type according to manufacturer (please specify)
Other specifications

OPERATOR ALERTS SYNCHRONIZATION, X-ray
Generator
CONTROLS TYPE According to manufacturer (please specify)
OTHER SPECIFICATIONS
According to manufacturer (please specify)
POWER REQUIRMENTS 220/240 VAC, 50/60 Hz

Image sharing DVD, USB SYSTEM INTEGRATION DICOM – YES
CT image storage SCU/SCP – YES
Enhanced CT storage SCU/SCP – YES
ECG waveform SCP/SCU – YES
Modality worklist SCU – YES
Wuery/retrieve SCU and SCP – YES
Storage commitment SCU – YES
Modality performed procedure step SCU – YES
IHE profiles supported SW, PIR, CPOI, PGI, KIN, BS, EDM, Pdfl, CT
IMAGE PROCESSING
Standard or optional standard Powerful Recommended post processing workstation – YES
Remote access to raw image data – YES
Remote access to clinical applications – YES
DICOM 3-D image export – YES
Power supply – Medical Approved power supply board