

購買（英文）規格書

COMMODITY DESCRIPTION

關稅分類番號 H.S. NO.	品目番號 ITEM NO.	品目 및 規格 DESCRIPTION	單位 UNIT	數量 QUANTITY
		심장혈관조영촬영기	set	1

A. Features:

1. Excellent image quality at the lowest possible dose
2. Its 16-bit dynamic flat detector offers 154micron pixels for higher resolution and a DQE (0) of 77% that provides better image quality, especially for low dose fluoroscopy.
3. To make operation as convenient as possible, the Geometry Table Side Operation Module (TSO) can be positioned on all sides of the patient table. TSO Module can be positioned at all sides of the patient table, while retaining intuitive button operation.
4. This RIS/CIS DICOM interface option uses DICOM Worklist Management (DICOM WLM) and Modality Performed Procedure Step (DICOM MPPS) standards to enable two-way communication between main system and a local Information System.

B. Specifications:

1. Fully balanced ceiling suspended C-arm stand
 - 1) Depth of C-arm: 90cm or 94cm
 - 2) Projection angles
 - Angulation (Head end): 90° / 90° or 100° / 100° CRA/CAU
 - Rotation (Head end): 120° / 185° or 150° / 180° LAO/RAO
 - Angulation (Patient left & right side): 120° /185° or 150° / 180° without table
 - Rotation (Patient side): 90° / 90° or 100° / 100° LAO / RAO
 - 3) Max. rotation speed: 25° /s
 - 4) SID: 89.5 to 119.5cm or 94 to 124cm

- 5) Motorized parking
- 6) Arm movement can be performed manually and motorized.
- 7) Stand Rotation: 90° / 90° or more

2. Patient table

- 1) Tabletop length: 295.6cm or more
- 2) Tabletop width: 48cm or more
- 3) Motorized tabletop height adjustment: 74 ~ 102cm or 75 ~ 110cm
- 4) Transversal float: 35cm or more
- 5) Maximum allowable patient weight: 325kg or more
- 6) CPR can be performed at any position of table
- 7) Table Rotation: -90° ~ 180° or $\pm 120^{\circ}$

3. High frequency converter generator

- 1) Voltage range: 40 to 125kV
- 2) Maximum current: 1000mA
- 3) Maximum continuous power: 1.5kW for 8 hours or more

4. X-ray tube assembly

- 1) Type: Spiral groove or Liquid Metal Bearing
- 2) Focal spots: 0.4/0.7mm or 0.3/0.4/0.7mm
- 3) Focal spot nominal power: 26/40/90kW or 30/65kW
- 4) Max. Fluoro power: 160mA or more
- 5) Grid Switching at pulsed fluoroscopy
- 6) Max. anode cooling rate: 1520kHU/min or more
- 7) Max. anode heat storage capacity: 5.2MHU or more
- 8) Max. assembly heat storage: 7.3MHU or more
- 9) Cooling type: Direct oil cooling or Oil & Water cooling

5. Image Detection, Dynamic Flat Detector

- 1) Detector size (Diagonal): 20 inches
- 2) Detector size including housing: 512 x 405mm or 546 x 431mm

- 3) Max. FOV: 48cm diagonal or more
- 4) The No. of detector zoom modes: 7 zoom or more
- 5) Image matrix: 1904 x 2584 pixels or 1920 x 2480 pixels
- 6) Pixel size: 154 x 154 microns
- 7) Detector bit depth: 16 bits
- 8) 3D recon bit depth: 8 bits or more
- 9) Nyquist frequency: 3.25lp/mm
- 10) DQE: 77% at 0lp/mm
- 11) Digital output: 2048 x 2048, 1024 x 1024, 512 x 512
- 12) SID can be controlled motorized and manually
- 13) Cooling type: Air cooling

6. Monitor ceiling suspension for LCD monitors

- 1) Ceiling suspended monitor can be motorized or manual height adjustment
- 2) Monitors rotate range: 330 degrees or more
- 3) Travel range of ceiling-mounted carriage: 300cm or more

7. Touch screen module for system control

- 1) Each 1 set at the table side and control room
 - Acquisition setting
 - Image processing
 - Automatic Position Control
 - Quantitative Analysis
 - Interventional tool S/W table side control

8. Large Color LCD monitor in the exam room

- 1) Monitor size: 55inch color LCD
- 2) Monitor Panel: IPS or VA
- 3) Resolution: 8Megapixel (3840 x 2160, 4K UHD)
- 4) Max Brightness: 800cd/m² or more
- 5) Color depths: 8 bits or more

- 6) Viewing angle: 176 degrees
 - 7) Display information from up to 8 sources simultaneously
 - 8) Snapshot function
9. Additional emergency backup displays (on top of large color LCD monitor): Two monitors of 24inch or more
10. Multi-source display solution for control room: FlexSpot or 24inch Color Display
- 1) Integrated solution in the Control room to view, control and manipulate all applications within a single view
 - 2) Two monitors of 24inch or more
 - 3) Format Native format: 1920 x 1200 or more
 - 4) High Brightness: max 350Cd/m², default 250Cd/m² or more
 - 5) Image storage capacity: 400,000 images or more
 - 6) Keyboard and Mouse
11. Radiation Dose management package: CARE Package or DoseWise
- 1) A set of techniques, programs and practices built into the X-ray system that allows excellent image quality during each interventional application, while at the same time managing x-ray dose at every opportunity.
 - 2) Real time patient entrance dose monitoring and automatic update of accumulated air kerma calculation upon every system change
12. Advanced Image Processing technique: CLEAR Package or DoseWise
- 1) Advanced image processing technology
 - 2) Flexible digital imaging pipeline
 - 3) Clinical optimized parameters in the entire imaging chain
13. Angiography imaging applications
- 1) Pulsed Fluoroscopy

- 2) Digital Subtracted Angiography
- 3) Roadmap
- 4) Live Pixel Shift
- 5) Standardize protocol loading: ProcedureCards or Case Flow
- 6) Real-time image enhancement during the Stent Boost Live run:
StentBoost & StentBoost Live or ClearStent & ClearStent Live
- 7) Sequentially displays enhanced stent and vessel images to show their relationship, aiding the evaluation of vessel-stent interactions in stent-in-stent or stent overlap cases.:
StentBoost Subtract or CLEARStent Dynamic
- 8) Supports Planning and Live Guidance for structural heart diseases: Heart Navigator or Syngo Aortic Valve Guidance
- 9) Provides acquisition, storage and display of physiological signals: Physio Viewing or ECG recording and storage
- 10) Quantitative Coronary Analysis (QCA)
- 11) Quantitative Vascular Analysis (QVA)
- 12) Rotational scan or Syngo Dyna 3D
- 13) Vessel Navigator or Syngo EVAR Guidance
- 14) Bolus chasing acquisition for lower extremities: Subtracted Bolus Chase or PeriVision
- 15) Allows us to work independently and together in exam room and control room, without interrupting each other: Instant Parallel Working or Patient Parallel Processing
- 16) Full system APC Function: User can position the geometry to the exact position where a previous run was acquired, or to the position of any run displayed in the reference images, by selecting the desired reference run no matter where the geometry is right now even including longitudinal C-arm movement.
- 17) Saving runs as references: User can transfer runs to reference monitor to compare runs on reference with runs on live monitors at the same time.

- 18) Full-filled vessel image overlaid on live image for image guidance. Change vessel map density for better image quality on live fluoroscopy. Seamless integration into workflow and in daily clinical practice.: SMART Mask or Overlay Reference
- 19) Low-Contrast Computed Tomography imaging: syngo DynaCT or SmartCT soft-tissue
- 20) Overlay 3D volume on fluoro image with real-time adjustment of C-arm and table: syngo 3D Roadmap or SmartCT Roadmap
- 21) Supports 4D tools through complex vessel structures, enhancing clinical outcomes: syngo 3D Toolbox or SmartCT Roadmap
- 22) Two ConeBeam CT run for different injection phases in one acquisition: syngo DynaCT Dualphase or SmartCT Dualphase
- 23) 3D Image Shooting Function by Moving to a Location with Less Collision with the Patient Table when Shooting 3D Images: syngo DynaCT Open Trajectory or XperCT Open Trajectory
- 24) Editing 3D volume segmented area to wished area to evaluate area volume: syngo 3D Segmentation or 3D Lesion segmentation
- 25) 3D function that reconstructs 3D volume and transform curved volume into straightened vessel to evaluate vessel patency: curved MPR view
- 26) Automated 3D subtracted image for Dual Volume - Native, Fill, Subtracted 3D image with 2 rotations in 1 run: syngo Dyna3D DSA or Dual Viewer
- 27) Superimposed visualization of 2 different 3D volumes (AX, CT, MR, PET, etc.): syngo Dual Volume or Dual Viewer
- 28) Endovascular treatment solution with one-click automatic bone removal software on CT: Auto bone removal or Dual Viewer
- 29) Remask, peak opacification for CO₂ contrast (MinOpac), display of anatomical background (Landmark) from 0 to 100 %: DSA
- 30) Using a predefined exposure pattern, the system automatically performs full correction for objects positioned at the isocenter (rotation center): Auto ISO, TOD Calibration or Auto

Calibration

14. 3D Workstation specification: 3D Workstation or Interventional Workspot

15. Unique Feature: A or B

[Unique Feature A]

- 1) OPTIQ: Automatic self-adjusting image-processing of noise and contrast to pre-set personal image quality level at acquisition. Maintain selected image quality and optimal radiation at any C-arm angulation, SID, and collimation.
- 2) OPTIQ DSA: Unique sequence of highly optimized X-ray physics, configurable mask-averaging, and six-dimensional motion correction to increase contrast and sharpness.
- 3) OPTIQ Roadmap: Assists in high-contrast visualization of the vessel anatomy, with two phases, vessel phase and device phase.
- 4) Structure Scout: Specialized dose saving and image enhancement program that greatly enhances efficiency of X-ray. Material specific algorithm exploits the materials by absorption characteristics.
- 5) Detector integrated control panel: Adjust C-arm movement, angulation, SID and rotation in emergency with buttons on the detector
- 6) CAREfilter: Automatic copper prefiltration for reduction of skin dose
- 7) Extended image storage: Extended Storage saving up to 600,000 images in 1,024 x 1,024 x 12 bits
- 8) The maximum storable fluoroscopic time is configurable up to unlimited where it is limited by the maximum DICOM file size

[Unique Feature B]

- 1) Clarity IQ: High quality imaging technology with ultra-low dose

levels for a variety of clinical procedures. Allows images to be processed with no notable delay between acquisition and display. Less motion blurring in fast moving structures like the heart and GI tract. Reduces radiation dose exposure to physicians, staff and patients as there is less scatter

- 2) View pad (Remote controller): Run and Image Selection, Exam and Run for Storage, Storing Reference Image to Reference Monitors, Subtraction and Image Mask Selection
- 3) TSM Pro: Enables table side control of applications via tablet-like interface with on screen image display.
 - Roadmap digital zoom function with fingers using TSM
 - Measure distances directly on the image displayed with fingers using TSM
 - Screenshot capture of specific viewport with fingers using TSM
 - Multi-modality visualization function on TSM
- 4) FlexVision Pro: Enables full and flexible viewing and control at table side of all connected applications. Resize and enlarge information at any stage during the case
- 5) DCR (Dynamic Coronary Roadmap): Real-time, automatic, motion compensated coronary imaging for guidance
- 6) Supports Planning and Live Guidance for structural heart diseases, Heart Navigator room no.2
- 7) Real time digital link: Between the interventional hardware and main system. This dedicated digital link sends raw or processed image data real time exposures to the connected interventional hard station to allow instant results of the applicable reconstruction after the exposure run.
- 8) Injector Coupling: Timing of contrast injection and X-ray imaging can be coupled in order to synchronize the acquisition of images to the flow of contrast medium. It can be controlled within the system when connected.
- 9) Roadmap Pro: Advanced roadmap software enabling high-contrast

visualization of vessel anatomy with vessel phase and device phase guidance.

16. Standard Accessories

- Mattress	1ea
- Arm support	1ea
- Dripstand	1ea
- Pan handle	1ea
- Ceiling mounted radiation shield	1ea
- Table mounted radiation shield	1ea
- Rail accessory clamps	1ea
- Set of elbow support	1ea
- Intercom	1ea
- Footswitch	1ea
- Wireless footswitch	1ea
- Examination light	1ea
- Head holder	1ea
- Operation & Service Manual	each 1set

17. Local Accessories

- Site preparation new EQ and current CR reinstall	1set
- 가구(검사실내 진료재료장, 책상, 의자, 수납장)	1set
- Goggle	15set
- Apron & Thyroid Protector	20set
- PTA 진료재료 보관 이동 카트(한림)	1set
- Retrograde IR Platform 1ea / Drape Support 1ea	1set
Adducted Arm Scoop 2ea / Antegrade IR Platform 1ea	
- Tourniquet System (ATS-5000)	1set
Tourniquet CUFF D P 1ea / DUAL HOSE (RED & BLUE) each 1ea	
- Injector	1set
- Fluoro recording system	1set
- Removing existing equipment and moving from the hospital	1set

to the desired place

C. Configurations:

1. Fully balanced ceiling suspended C-arm stand	1set
2. Patient table	1set
3. High frequency converter generator	1set
4. X-ray tube assembly	1set
5. Image Detection, Dynamic Flat Detector	1set
6. Monitor ceiling suspension for LCD monitors	1set
7. Touch screen module for system control	2set
8. Large color LCD monitor in the exam room	1set
9. Additional emergency backup displays (on top of large color LCD monitor)	2set
10. Multi-source display solution for control room 1set (Monitor 2ea)	
11. Radiation Dose management package	1set
12. Advanced Image Processing technique	1set
13. Angiography imaging applications	1set
14. 3D Workstation specification	1set
15. Unique Feature: A or B	1set
16. Standard Accessories	1set
17. Local Accessories	1set

D. Remarks:

1. The equipment should be installation by contractor.
2. Three years warranty after the installation and correct operation.
3. Manufactured products must be delivered within one year based on the inspection date.
4. Products that are not scheduled to be discontinued within one year after delivery must be delivered.
5. A report must be summited after conducting a preventive inspection in accordance with the hospital medical equipment inspection regulations within the warranty period.

6. The cost of removing existing equipment and moving from the hospital to the desired place shall be borne by the contractor.
7. Site preparation new EQ and current CR reinstall of 16. Local Accessories means interior construction of new equipment installation sites, removal of access floor in control room, and rearrangement of controllers of room 2 equipment.
8. 보증기간 제외품목: 16. Local Accessories 중 가구, Goggle, Apron & Thyroid Protector, PTA 진료재료 보관 이동 카트, Retrograde IR Platform