

H.S.No.	" Specification "	Q'ty
9022 14 1020	Single plane Interventional X-ray imaging system Azurion 7M20	1 system

A. Application

1. Angiography is an imaging test that uses X-rays to view patient's blood vessels. This test is used to study narrow, blocked, enlarge, or malformed arteries or veins in many parts of patient's body, including their brain, heart, abdomen, and legs.

B. Features

1. Excellent image quality at the lowest possible dose
2. Its 16-bit dynamic flat detector offers 154 micron 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.

C. Configuration

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| 1. Fully balanced ceiling suspended C-arm stand | 1 set |
| 2. Patient table | 1 set |
| 3. Microprocessor controlled, 100kW high frequency converter generator | 1 set |
| 4. Digital pulsed fluoro | 1 set |
| 5. Digital Acquisition | 1 set |
| 6. High power Metal tube assembly, MRC-GS 200 + 0407 | 1 set |
| 7. Image Detection, Dynamic Flat Detector | 1 set |
| 8. Monitor ceiling suspension for LCD monitors | 1 set |
| 9. FlexVision XL - Large color LCD monitor in the exam room | 1 Pkg |
| 10. Geometry Automatic Position Controller | 1 set |
| 11. Viewing station for patient management | 1 set |
| 12. Instant Parallel Working | 1 set |
| 13. Table Side Operation Module | 1 set |
| 14. Touch screen module for system control | 2 set |
| 15. Dose management | 1 set |
| 16. Safety system | 1 set |
| 17. ProcedureCards. | 1 set |
| 18. Zero Dose Positioning | 1 set |
| 19. Storage Capacity | 1 set |

20.	Real time digital link	1 set
21.	DICOM Interface	1 set
22.	FD Dual Fluoro mono	1 set
23.	SMART Mask	1 set
24.	Digital Subtraction Angio	1 set
25.	Quantitative Coronary Analysis	1 pkg.
26.	Quantitative Vascular Analysis	1 pkg.
27.	Physio viewing	1 pkg.
28.	Clarity IQ technology (Unique)	1 Pkg
29.	StentBoost Live Software package	1 pkg.
30.	Dynamic Coronary Roadmap	1 pkg.
31.	Accessories	1 set
32.	Local Accessories	1 lot

D. Specification

1. Fully balanced ceiling suspended C-arm stand 1 set
 - 1) Depth of C-arm : 90 cm
 - 2) Projection angles
 - Angulation (Head end) : 90°/90° cranial / caudal
 - Rotation (Head end) : 120°/185° LAO / RAO
 - Angulation (Patient left & right side):185°/120° cranial / caudal
 - Rotation (Patient side) : 90°/90° LAO / RAO
 - 3) Max. rotation speed : 25°/s
 - 4) SID : 90 to 123.5 cm
 - 5) Motorized parking
 - 6) Arm movement can be performed manually and motorized.
 - 7) System operation at 3 sides of the patient support
2. Patient table 1 set
 - 1) Tabletop length : 319 cm
 - 2) Tabletop width : 50 cm
 - 3) Motorized tabletop height adjustment : 74.5 to 102.5 cm
 - 4) Lateral float range : 36 cm
 - 5) Longitudinal float range : 120cm
 - 6) Maximum allowable patient weight : 325kg
 - 7) CPR can be performed at any position of table
3. Microprocessor controlled, 100kW high frequency converter generator 1 set
 - 1) Voltage range : 40 to 125 kV
 - 2) Maximum current : 1000mA at 100kV
 - 3) Maximum continuous power : 1.5 kW for 8 hours
4. Digital pulsed fluoro 1 set
 - 1) Pulse rates : 0.5, 1.0, 3.75, 7.5, 15 and 30 pulses per second
 - 2) Grid-switched pulsed fluoroscopy
5. Digital Acquisition 1 set
 - 1) Customized with a virtually unlimited number of acquisition programs
 - 2) Realtime image processing algorithm Xres provides excellent image quality with reduce noise in clinical images.

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| <p>6. High power Metal tube assembly, MRC-GS 200 + 0407</p> <p>1) Type : Spiral groove (No bearing type)</p> <p>2) 0.4/0.7 mm focal spot, 30/65 kW</p> <p>3) Grid Switching at pulsed fluoroscopy</p> <p>4) Max. anode cooling rate : 1820 KHU/min</p> <p>5) Max. anode heat storage capacity : 6.4 MHU</p> <p>6) Max. assembly heat storage: 9.4 MHU</p> <p>7) Anode heat dissipation : 22,000 W</p> <p>8) Continuous anode heat dissipation : 3,500 W</p> <p>9) Cooling type : Direct oil cooling</p> | <p>1 set</p> |
| <p>7. Image Detection, Dynamic Flat Detector</p> <p>1) Size of detector housing : 42 cm x 52 cm</p> <p>2) Max. FOV : 48 cm diagonal</p> <p>3) Detector zoom fields : 48/42/37/31/27/22/19/15 cm diagonal</p> <p>4) Image matrix : 2480 x 1920 pixels at 16 bits depth</p> <p>5) Pixel size : 154 x 154 microns</p> <p>6) Detector bit depth : 16 bits</p> <p>7) Nyquist frequency : 3.25 lp/mm</p> <p>8) DQE : 77% at 0 lp/mm</p> <p>9) Digital output : 2048 x 2048, 1024 x 1024, 512 x 512 at 16 bit depth</p> <p>10) SID can be controlled motorized and manually</p> | <p>1 set</p> |
| <p>8. Monitor ceiling suspension for LCD monitors</p> <p>1) Ceiling suspended monitor can be motorized height adjustment</p> <p>2) Monitors rotate range : 350 degrees</p> | <p>1 set</p> |
| <p>9. FlexVision XL - Large color LCD monitor in the exam room</p> <p>1) Display information from up to 8 sources simultaneously</p> <p>2) Resize and/or enlarge information at any stage during the case</p> | <p>1 Pkg</p> |
| <p>10. Geomerty Automatic Position Controller</p> <p>1) Reproducing precise coordinates</p> <p>2) Recall stand positions using reference image source.</p> | <p>1 set</p> |
| <p>11. Viewing station for patient management</p> <p>1) Power on/off of the system</p> <p>2) Exam and run cycle</p> <p>3) Adjustment of contrast, brightness, and edge enhancement</p> <p>4) Exam, run, and image stepping</p> <p>6) Run and exam overview</p> <p>7) Delete run</p> <p>8) Basic review functionality as image invert and digital zoom</p> <p>9) Go to basic settings</p> <p>10) Reset fluoroscopy timer and switch X-ray on/off.</p> <p>11) ViewPad controls</p> | <p>1 set</p> |
| <p>12. Instant Parallel Working</p> | <p>1 set</p> |

- 1) Allows you to work independently and together in exam room and control room, without interrupting each other
- 2) Prepare the next patient or report on previous patient

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| 13. | Table Side Operation Module
1) Fluoroscopy Flavor selection as defined via clinical setting
2) Shutters and wedge positioning
3) Manual or automatic wedge including position on the last image without radiation
4) Fluoro Storage to record the last 20seconds of fluoroscopy
5) Selection of the detector field size
6) Preferred beam width and Fluoro Grab to store the last fluoro image
7) Reset of the fluoroscopy buzzer
8) Real-time subtraction and Fluoro Trace subtract
9) Tabletop float
10) Table height position
11) Source Image Distance (SID) selection
12) Stand positioning
13) Longitudinal movement of the stand along the ceiling
14) Stand rotation in an axis perpendicular to the ceiling
15) Store and recall of two stored stand positions including SID
16) Emergency stop button
17) Accept button of the Automatic Positioning Control. | 1 set |
| 14. | Touch screen module for system control
1) Acquisition setting
2) Image Processing
3) Automatic Position Control (APC), 'unlimited' number of stand positions can be stored and recalled from touch screen module.
4) Table Automatic Position control
5) Interventional tools table side control
6) Table and geometry lock functions
7) X-ray enable/disable
8) Fluoroscopy buzzer reset
9) Stopwatch
10) Fluoro store
11) Cleaning mode
12) Control of monitors | 2 set |
| 15. | Dose management
The touch screen module has a touch screen, which can be operated when covered with sterile covers. The touch screen module allows control of (depending on configuration): <ul style="list-style-type: none"> • Interventional Tools, • Monitor layout • X-Ray settings (Collimation, Projections, Table, Series and Processing) | 1 set |
| 16. | Safety system
1) Real time patient sensing auto stop without touch the patient | 1 set |

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| 17. | ProcedureCards.
With one click you can select exam presets to accelerate and standardize preparation
Optimize and standardize system set-up from routine to mixed procedures
Increase the consistency of exams by offering presets
Hospital checklists and/or protocols can be uploaded | 1 set |
| 18. | Zero Dose Positioning
Allows you to change the table height, pan, or move the geometry on Last Image Hold (LIH) image without using fluoroscopy | 1 set |
| 19. | Storage Capacity
1) Storage capacity : 100,000 images at 1024 ²
25,000 images at 2048 ² | 1 set |
| 20. | Real time digital link
- Real Time digital image link between the Interventional Hardware and main system
- This dedicated digital link sends raw or processed image data real time during monoplane exposures to the connected Interventional Hardware station to allow instant results of the applicable reconstruction after the exposure run. | 1 set |
| 21. | DICOM Interface
1) DICOM Work List Management (WLM)
2) Modality Performed Procedure Step (DICOM MPPS)
3) DICOM SC/XA
4) DICOM SR | 1 set |
| 22. | FD Dual Fluoro mono
An additional fluoro channel in parallel to the standard fluoro channel
View the subtracted fluoroscopy next to the default non subtracted fluoroscopy
View a digitally zoomed fluoroscopy image next to the default fluoroscopy image | 1 set |
| 23. | SMART Mask
Simplifies the roadmapping procedures by overlaying on the live monitor fluoroscopy with a selected reference image.
The reference image can be faded in/out with variable intensity controlled from the viewpad.
SmartMask uses the reference image displayed on the reference monitor. | 1 set |
| 24. | Digital Subtraction Angio
1) Vascular DSA acquisition speeds at 1024 matrix : 0.5/1/2/3/6 fps
2) Fluoro Trace
3) Fluoro Subtract
4) Exposure subtract
5) Mask selection
6) Real-time Pixel shift | 1 set |

25.	Quantitative Coronary Analysis	1 pkg.
26.	Quantitative Vascular Analysis	1 pkg.
27.	Physio viewing Acquisition and storage of a maximum 4 channels of physio data together with the X-ray images 1) Setting determined storage on/off of all inputs; recording only in parallel with X-ray acquisition 2) Operator can select one recorded physio channel for display	1 pkg.
28.	Clarity IQ technology (Unique) 1) Clarity image processing technology 2) Automatic Pixel Shift 3) Motion Compensation 4) Noise Reduction 5) Image Enhancement	1 Pkg
29.	StentBoost Live Software package 1) Automatic marker detection 2) Real-time image enhancement during the StentBoost Live run 3) Immediately after acquiring the StentBoost Live run, is automatically looped three times 4) fully integrated in the interventional X-ray system 5) Image snapshots or movies can be archived to DICOM compatible PACS, include DICOM XA and DICOM SC	1 pkg.
30.	Dynamic Coronary Roadmap 1) Real-time, automatic, motion compensated coronary imaging for guidance 2) Navigate coronary arteries efficiently and with confidence	1 pkg.
31.	Accessories - Mattress - Arm supports - Dripstand - Pan handle - Table mounted radiation shield - Intercom - Examination light - Foot switch - Pedestal	1 set 1 ea 1 ea 1 ea 1 ea 1 ea 1 ea 1 ea 1 set
32.	Local Accessories 1) Ultra sound 2) Hemo system (MacLab AltiX) 3) Temperature Management System (Arctic Sun stat) 4) Furniture 5) Apron & Goggle	1 lot 1 set 1 set 1 set 1 set 2 set

6) Auto injector (ILLUMENA NEO_stand)	1 set
7) QCA software (Medipixel XA_MPXA)	1 set
8) Interior	1 set

E. REMARKS

1. Installation
Contractor is responsible for installation of this equipment at customer's premise.
2. Warranty
Contractor or supplier shall be responsible for free of charge after-service for three years
3. Training
Contractor or supplier should provide local training for operation for 1 week to an operator.

순환기내과 교수: 고정석 (인)

