

물 품 규 격 서

- ☐ 입찰공고번호 : (학)일송학원 관리국 제2025-084호
- ☐ 입찰건명 : 신경외과·방사선종양학과 Linear Accelerator 구매
- ☐ 수요기관 : 한림대학교 동탄성심병원
- ☐ 납품장소 : 수요기관 희망장소 입고도
- ☐ 물품내역 등

연번	품명(영문, 국문)	규격 및 사양	총 구매 예정수량 (Q'TY)	1회 최대 발주수량	Warranty 기간	단위 (Unit)
1	Linear Accelerator (선형 가속기)	하단 참조	1	1	검수(합격)일로부터 3년 종료월 말일까지	SET

☐ 공통사항

- 장비의 설치와 작동 및 교육은 무상으로 제공한다.
- 수요기관 담당자 입회하에 계약상대자는 제품의 설치 테스트 및 시험작동을 실시하여야 한다.
- 무상 하자담보 책임기간은 물품 검수(합격)일로부터 3년 종료월 말일 까지를 기본 원칙으로 하며 계약상대자의 추가 제안에 따라 3년 종료월 말일 까지의 기간을 초과하여 설정할 수 있다.
- 무상 하자담보 책임기간 중 수요기관의 사정으로 인하여 부서 및 장비의 위치가 불가피하게 이동을 필요로 할 경우 설명 및 설치 시 협의 하에 실비 기준으로 이루어진다.
- 무상 하자담보 책임기간 중 중 공급된 장비의 부속품이 단종된 경우 수요기관이 인정하는 동등 이상의 장비로 무상 교체가 이루어져야 한다.
- 계약상대자는 어떠한 상황에서도 애프터서비스를 위하여 전문서비스 인력을 제공하여야 하며 애프터서비스를 위하여 교체 부품을 보관하여야 한다.
- 계약상대자는 장비 납품 시 납품일을 기준하여 제품 제조년월이 6개월 이내인 장비를 납품하고 납품장비에 해당 제조년월이 명시되어야 한다.
- 기존 노후 의료장비 철거 및 회수(또는 보상판매) 조건으로 제안할 수 있다.

〈규격 · 사양 - A〉

A. Features

- 1.01 Treatment delivery system supports optional Electron treatment delivery. Includes HD120 leaf MLC with dual independent jaws, enhanced dynamic wedge, 6 MV X-ray treatment energy, 43 cm x 43 cm MV imager for radiographic, cine, and integrated imaging, Motion View CCTV camera system, treatment console with integrated audio and video systems, back pointer lasers, front pointer set, upper port film graticule to support basic quality assurance, and drum phantom for Machine Performance Check.
- Basic X-Ray treatment delivery technique package, including Static Photon, Photon Arc, and Dynamic Conformal Arc treatment delivery techniques
 - Intensity Modulated Radiotherapy (IMRT) treatment technique, including large field IMRT
 - Total Body Treatment technique package
 - 2D MV Radiographic and Cine Image Acquisition, 2D/2D Radiographic Image Review and match, Cine image review
 - Relative Portal Dosimetry Image and Integrated Image Acquisition
 - Matching of 2D radiographs to 3D reference images
 - Online addition of kV and MV imaging protocols to treatment fields, with automated generation of reference images
 - Online Physician Approval of Images at Treatment Console (compatible with ARIA only)
 - Automated Machine Performance Check Testing, online Machine Performance Check Review
 - Offline Machine Performance Check Review
 - Image only sessions
 - Unplanned Treatment Mode up to 5 fractions
 - Fraction number displayed on in-room monitor
 - Match environment layout for 2D/2D and 2D/3D layouts default to the 2-panel
 - Custom DRR templates that are created in Eclipse will be available on the LINAC Platform
 - Online access to a marketing kit that contains a broad range of advertising, educational, promotional, and public relations materials targeted to referring physicians, patients, and the media
 - Electronic Dynamic Wedges (EDW)
 - Large field IMRT

B. Specifications

	Qty
1.02 Linear Accelerator v4.1	1
1.03 New Universal Baseframe 52" Fixed Floor	1
1.04 10/10 MV (BJR 11/17)	1
40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	

1.05	6/6 MV (BJR 11/17) 40 cm x 40 cm maximum field size, dose rate range 0-600 MU/Min.	1
1.06	20 MeV, 0-1000 MU/Min 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.07	16 MeV, 0-1000 MU/Min 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.08	12 MeV, 0-1000 MU/Min 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.09	9 MeV, 0-1000 MU/Min 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.10	6 MeV, 0-1000 MU/Min 25 cm x 25 cm maximum field size, dose rate range 0-1000 MU/Min.	1
1.11	IGRT Couch Top Image Guided RadioTherapy (IGRT) carbon fiber treatment couch top, free of metal or other radiation-opaque materials. Features: <ul style="list-style-type: none"> • Indexed Immobilization® for compatible accessories • Couch top interface for mounting patient immobilization and quality assurance devices at the head of the couch • Lock bar for indexed positioning of equipment or immobilization devices on the couch top • Handrail for couch positioning, with hooks for temporary pendant placement during patient set up 	1
1.12	PerfectPitch 6DoF Couch The PerfectPitch™ 6-Degrees of Freedom couch system Features: <ul style="list-style-type: none"> • Image-based 6DoF patient positioning 	1
1.13	10X High Intensity Mode 40 cm x 40 cm maximum field size, dose rate range 400-2400 MU/min in 400 MU/min steps.	1
1.14	6X High Intensity Mode 40 cm x 40 cm maximum field size, dose rate range 400-1400 MU/Min in 200 MU/min steps.	1
1.15	9 MeV HDTSE, 0-2500 MU/min 9 MeV High Dose Total Skin Electron energy configuration. Dose rate 2500 MU/Min.	1
1.16	6 MeV HDTSE, 0-2500 MU/min 6 MeV High Dose Total Skin Electron energy configuration. Dose rate 2500 MU/Min.	1
1.17	Low-X Imaging Energy Low-X imaging energy configuration, providing high soft tissue contrast when imaging in-line with the treatment beam.	1

1.18	Delta Couch	1
	Delta Couch supports automated management of treatment plan-based shifts from initial set up mark to treatment isocenter.	
	Features:	
	• Delta couch shift set-up	
1.19	RapidArc Treatment Delivery	1
	RapidArc® Treatment Delivery is a volumetric modulated arc treatment delivery technique.	
	Features:	
	• Simultaneous modulation of MLC aperture shape, beam dose rate, and gantry angle and rotation speed during beam delivery	
	• Supports dynamic jaw tracking and collimator rotation with supporting treatment planning system	
1.20	kV Imaging System	1
	kV Imaging system, providing 2D radiographic and fluoroscopic and 3D CBCT imaging capability.	
	Features:	
	• kV CBCT image acquisition, review, and match to 3D reference image	
	• Radiographic image acquisition, with 2D/2D and 2D/3D image matching to reference image	
	• Fluoroscopic image acquisition, with structure overlay on fluoroscopic images.	
	• kV CBCT image acquisition with a long field of view, provided by merging multiple indexed CBCT images. Online data acquisition and viewing only.	
1.21	Main Circuit Breaker Panel	1
	Main circuit breaker panel, interfacing to a single power input feed from the facility Mains. Circuit breakers provide independent over-current protection for equipment at the console and in the treatment room. UL and IEC/CE certified.	
1.22	Supp. Phantom Kit	1
	Supplemental imaging phantom kit for measuring resolution and contrast of kV and MV imaging systems.	
1.23	ICVI for LINAC platform (MPC)	1
	The Integrated Collimator Verification and Interlock (ICVI) system provides electronically-verified conical collimators for use in radiosurgical treatment delivery.	
	Features:	
	• Conical collimator mounting system with integrated mount verification	
	• Set of 7 conical collimators with integrated verification	
	• Conical collimator set (in mm diameter): 4, 5, 7.5, 10, 12.5, 15, and 17.5	
	• ICVI QA Toolkit	

1.24	Developer Mode	1
	Provide access to a non-clinical workspace that supports research on image acquisition techniques and treatment techniques. Developer Mode is for Non-Clinical Use only.	
	Features:	
	• Developer Mode License	
1.25	Motion Management Interface	1
	Motion management interface is an integrated interface for validated external devices that provide patient positioning, patient and target motion monitoring, and/or respiratory gating. The Motion management interface supports connection of up to four external devices, two of which may be used for respiratory motion management or high speed beam hold.	
	Features:	
	• 4-DoF or 6-DoF patient positioning capability for compatible validated devices and couch configurations	
	• Integrated external device beam hold and image-based patient repositioning workflow	
	• Patient-specific external device activation and patient plan verification	
1.26	Vertical LAP Apollo Green Laser Kit	1
	LAP Apollo Green Room Laser Kit for patient alignment with Vertical Remote-Controlled Sagittal Line Laser.	
	Features:	
	• 1 Apollo Green Remote-controlled Ceiling Crosshair Laser	
	• 2 Apollo Green Remote-controlled Lateral Crosshair Lasers	
	• 1 Apollo Green Vertical Remote-Controlled Sagittal Line Laser	
1.27	Advanced Resp Motion Management System	1
	Stereoscopic optical system for managing patient respiration motion during treatment delivery and imaging.	
	Features:	
	• Stereoscopic optical imager, including marker block for tracking patient respiration motion	
	• Respiratory gated treatment delivery	
	• Respiratory gated MV image acquisition and online review, respiration synchronized cine image acquisition and online review	
	• Respiratory gated kV image acquisition and online review, respiration synchronized fluoroscopic image acquisition and online review	
1.28	VCD Option, couch mounted	1
	Couch-mounted display system provides visual feedback to the patient for respiration stabilization or breath hold position during respiratory gated image acquisition or treatment delivery.	
	Features:	
	• 2 rechargeable batteries and charging system	
	• Video interface for optional use of customer-provided video goggles	
	• Wireless display system with adjustable count mount	

1.29	VCD w/Couch Mount – IGRT	1
1.30	Gated CBCT Provides the ability to acquire CBCT images synchronized with patient respiration (free-breathing or breath hold). Features: <ul style="list-style-type: none"> • Gated CBCT Imaging License: CBCT image acquisition, image review, and image match to respiratory gated reference image. • Short Arc CBCT Imaging License: CBCT image acquisition using a 120–150 degree arc, image review, and image match to respiratory gated reference image. Short arc CBCT is an option for single breath hold CBCT data acquisition 	1
1.31	Accelerated 4D CBCT Reconstruction License and hardware package for 4D CBCT accelerated reconstruction Features: <ul style="list-style-type: none"> • 4D kV CBCT License • 4D CBCT Reconstruction on GPU License Package • 4D kV CBCT Image Match Review License 	1
1.32	Enhanced Beam Conformance Specification The Enhanced Beam Conformance Specifications provide tight tolerances for key X-ray and electron beam energy performance specifications.	1
1.33	25 Undrilled Block Trays Undrilled trays, 0.635 cm thickness.	1
1.34	Upper Wedge Set 4-Way Wedge Set, including 15°, 30°, 45°, 60° wedges.	1
1.35	E-Arc Applicator Kit Set of ten (10) aperture trays for electron arc therapy Features: <ul style="list-style-type: none"> • Ten (10) aperture trays 	1
1.36	VVS v1.2 In-Room Acc & Patient Verif. The Verification System is a system which provides the capability to verify accessory and patient identification through the use of a barcode scanner system. Features: <ul style="list-style-type: none"> • One barcode scanner • One barcode label printer • One package of labels for barcode printer • Accessory and patient verification license • Federal Information Processing Standards (FIPS) 	1

1.37	Triggered Imaging	1
	Automated intrafraction 2D kV radiographic imaging, with images triggered by respiration phase or amplitude, gantry angle, time period, or MU. Automated image-based beam hold on fiducial markers, based on user-defined marker motion thresholds.	
	Features:	
	<ul style="list-style-type: none"> • Respiration Triggered Imaging • MU Triggered Imaging • Gantry Triggered Imaging • Time Triggered Imaging • Autobeam Hold 	
1.38	Quart Phantom	1
	Phantom for performing the Hounsfield Unit calibration for CBCT imaging.	
	Features:	
	Modules for measuring:	
	<ul style="list-style-type: none"> • HU accuracy and uniformity • Noise, Signal to Noise Ratio, and Contrast to Noise Ratio • Slice thickness • Spatial resolution 	
1.39	HVAC & Water Chiller	1
2	OIS/TPS system	
2.01	Eclipse desktop and licenses	
	RapidArc Planning Primary	1
	Eclipse™ RapidArc® Planning supports dynamic arc treatments produced through volumetric dose optimization to generate intensity modulated dose distributions in optimized arcs.	
	RapidPlan™ Knowledge Based Planning Core	1
	RapidPlan™ Knowledge-Based Planning Core Software leverages a machine learning approach and provides	
	Dose Volume Histogram(DVH) estimation models for various disease sites.	
	Features:	
	<ul style="list-style-type: none"> • RapidPlan interface for one (1) user • DVH estimation models from maker • Model Configuration interface for user defined DVH estimation model 	
	Eclipse Advanced Planner Desktop (Eclipse Calculation Workstation)	1
	Feature(s):	
	<ul style="list-style-type: none"> • Contouring and Image Registration Tools • 2D and 3D Photon Dose Calculation • 4D Planning and Image Support • 2D and 3D Brachytherapy Dose Calculation • Conformal Arc Planning • IMRT Planning • Eclipse Scripting API • DICOM RT 	

	RT Peer Review Core	1
	RT Peer Review Core provides the components to streamline the plan review meeting by using the bookmarked treatment planning information from External Beam Planning. Plan review feedback can be captured, and tasks followed up after the meeting.	
	Acuros External Beam	1
	Acuros® External Beam (Acuros XB) is a photon algorithm that provides dose calculation with the equivalent accuracy as the Monte Carlo algorithm.	
	Eclipse SBRT NTO	1
	Eclipse™ SBRT Normal Tissue Objective (SBRT NTO) is used to automatically improve dose conformity and limit dose bridging between Planning Target Volumes (PTVs)	
	Features:	
	<ul style="list-style-type: none"> • Site License • For use with SBRT extracranially 	
	MULTI-CRITERIA OPTIMIZATION (MCO)	1
	Eclipse™ MCO is a decision support tool incorporated within the existing IMRT or VMAT optimization workflow. MCO allows the end user to explore the impact that changing dose to a specific structure has on plan quality, target coverage, or organ at risk sparing.	
	GPU Enabled Framework Agent Server (FAS)	1
	A Framework Agent Server (FAS) that includes the necessary GPU (Graphics Processing Unit) cards required to support the Framework Agent Server GPU Algorithm license. The FAS is a high-performance server dedicated exclusively to running maker's Eclipse Distributed Calculation Framework (DCF). FAS with DCF leverages specialized Grid Clustering power (network-based parallel processing) to optimize throughput for Eclipse planning and dose calculation in both native client/server topologies and Citrix environments. Multiple Framework Agent Servers may be configured to create a FAS Array.	
	Eclipse Cone Planning Package	1
	Eclipse™ Cone Planning.	
2.02	ARIA desktop and license	1
2.03	3 years SSA	1
	Existing OIS/TPS system upgrade to the latest version and hardware replacement with the latest version	
3	RGSC (Respiratory Gating for Scanners)	
3.01	RGSC version 2.0	1
	Respiratory Gating for Scanners (RGSC) is for respiration synchronized image acquisition on CT and PET-CT scanners. The RGSC system correlates tumor motion with the patient's breathing cycle.	

3.02	VCD Option, Couch Mounted	1
	Visual Coaching Device (VCD), couch mounted	
	Features:	
	• Visual Coaching Device (VCD) monitor to assist patient to achieve a steady and predictable breathing pattern	
	• VCD connects to the Respiratory Gating for Scanners (RGSC) system wirelessly and supports all image acquisition modes, including breath-hold	
4	ExacTrac Dynamic	
4.01	EXACTRAC	
	EXACTRAC DYNAMIC 4D THERMAL CAMERA	1
	EXACTRAC DYNAMIC X-RAY SYSTEM	1
	EXACTRAC DYNAMIC CONTROL SYSTEM	1
	EXACTRAC DYNAMIC CEILING-MOUNTED MONITOR SYSTEM	1
	EXACTRAC DYNAMIC PELVIC VERIFICATION PHANTOM	1
	EXACTRAC DYNAMIC CRANIAL VERIFICATION PHANTOM	1
	CRANIAL 4PI IMMOBILIZATION SYSTEM	1
	EXACTRAC DYNAMIC PRE-INSTALLATION IN-FLOOR BOXES	1
	EXACTRAC DYNAMIC PRE-INSTALLATION CABLING AND MOUNTING PACKAGE	1
	EXACTRAC DYNAMIC SYSTEM CALIBRATION PHANTOMS (SET OF 2)	1
	EXACTRAC DYNAMIC PATIENT FEEDBACK SYSTEM	1
	ETD SURFACE GUIDED PRE-POSITIONING SOFTWARE	1
	ETD INTRA-FRACTION 4D THERMAL MONITORING SOFTWARE	1
	ETD INTRA-FRACTION X-RAY MONITORING SOFTWARE	1
	ETD DEEP INSPIRATION BREATH HOLD SOFTWARE	1
	ORIGIN DATA MANAGEMENT ETD	1
4.02	RT Elements 4.0 - RT Planning	
	PLANNING STATION PREMIUM (WITH DISPLAY)	1
	ORIGIN DATA MANAGEMENT RT	1
	ELEMENTS VIEWER 3D RT	1
	ELEMENTS OBJECT MANAGEMENT RT	1
	ELEMENTS SMARTBRUSH RT	1
	ELEMENTS SMARTBRUSH ANGIO RT	1
	ELEMENTS IMAGE FUSION RT	1
	ELEMENTS IMAGE FUSION ANGIO RT	1
	ELEMENTS SEGMENTATION CRANIAL RT	1
	ELEMENTS DISTORTION CORRECTION CRANIAL RT	1
	ELEMENTS DICOM RT STRUCT EXPORT	1
	ELEMENTS CRANIAL AND BRAIN METS SRS PACKAGE	1

5	Dosimetry Package	
5.01	IC PROFILER Beam Scanning System	1
	- Main Body and SNC Dosimetry S/W	1
	- Quad Wedge for Photon	1
	- Quad Wedge for Electron	1
	- GMF (Gantry Mount Fixture), Maker	1
5.02	SRS MapCHECK & StereoPHAN Package	1
	- Main Body and SRS MapCHECK S/W	1
	- MultiMet-WL Cube	1
5.03	SunSCAN 3D (BNC)	1
	- Main Body(Tank) and SNC Dosimetry S/W	1
	- SunSCAN Mini Lift	1
	- SunSCAN Reservoir	1
	- SunSCAN 3D Detector Holder Kit - Multi Detector Holder Kit	1
	- Universal Vertical Detector Holder	1
	- set up cap	2
5.04	1D Scanner	1
	- Main Body(Tank) and SNC Dosimetry S/W	1
	- Roos Parallel Plate Detector Holder for 1D SCANNER	1
	- Markus Detector Holder for 1D SCANNER	1
	- Leveling Platform (40cmx40cm)	1
	- Trolley for 1D Scanner	1
5.05	Neutron Survey Meter	1
5.06	SNC125c Scanning Ionization Chamber (TNC)	2
5.07	EDGE Detector	1
5.08	Dosimetry Cable (30meter)	2
5.09	Dosimetry Cable with reel (30meter)	2
6	Immobilization Package	
6.01	Type-S Carbon Fiber Overlay (20CFHNSUB)	1
6.02	C-Qual Breast Board with Arm & Wrist Supports (MT400)	1
6.03	Posirest-2 (106521)	1
6.04	SRS System	1
6.05	Carbon Fiber Uni-frame Baseplate (MT20103CF)	1
6.06	Silverman Headrestst, A~F (MTSILVER2)	1
6.07	Timo Headrest, A~F (MTTIMO)	1
6.08	Extended Wing Board(57cm), Arm Up T-Grip Positioner (MTWB08T)	1
6.09	Pron-Pillo Positioning Cushion (MTCB36)	1
6.10	Kneefix 3 Cushion Cream (301052)	1
6.11	Feetfix 3 Cushion Cream (301071)	1
6.12	Low Kneefix 2 (301048)	1
6.13	Elevation Blocks (301056)	1
6.14	Shoulder Retractor with Sherpa Wrist Loops (MTSR02)	1
6.15	Table Strap (Domestic)	1

6.16	Vac-Lok (75*150)	5
6.17	Vac-Lok (75*75)	5
6.18	Lok-bar	3
6.19	Variable Axis Baseplate (MTCFHNAB01)	1
6.20	Prone Face Cushion (MTPFC02)	1
6.21	Posifix Prone Headrest (301025BLK)	1
6.22	Prone Head Holder (MT202)	1
6.23	SBRT System (BPL300)	1
6.24	Solstice Thermoplastic, Accuform, Bite	10
7	RayStation	
7.01	RayStation Doctor (rayDeformable)	1
7.02	Warranty Extension (3Years) of previously installed Hardware	1
	- 32 inch monitors for user	
	- End point for RayStation Doctor	
8	Others	
8.01	"HealVue" Ambient AudioVisual Healing System	1
8.02	Philips UV-C Upper Air Disinfection System	3
8.03	Spine Board	2

C. Consist of(per 1 Set)

1	Linear Accelerator	1
	- Eclipse Calculation Workstation	1
	- RapidArc	1
	- RapidPlan	1
	- Portal Dosimetry	1
	- SmartSeg Knowledge Based Contouring	1
	- AurosXB Advanced Dose Calculation	1
	- RT Peer Review	1
	- Multi-Criteria Optimization	1
	- Eclipse Cone Planning Package	1
	- GPU Framework Agent Server(FAS)	1
	- HVAC & Water Chiller system	1
2	SRS Package	1
3	3 rd party items	
	- Immobilization Device Package	1
	- Dosimetry & Phantoms	1
	- Multimodality Image Processing Tool	1
	- Components of a treatment room	1

D. Remarks

- Warranty : 검수(합격)일로부터 3년 종료일 말일

〈규격 · 사양 - B〉

A. Features

The Gyroscopic Radiosurgery™ platform is a dedicated self-contained and self-shielded radiosurgery system developed and manufactured by maker's Surgical Systems, Inc. of San Carlos, California. This device is intended for stereotactic radiosurgery (SRS) treatment of tumors, lesions and conditions in the brain, head and neck when radiation treatment is indicated.

B. Specifications

1. Gyroscopic Radio surgery system 1 Q'ty
 - 1) 3 MV linear accelerator ; 1,500MU/min. S-band Linac, SAD 450mm
 - 2) Collimator : Uniquely designed collimator that enables rapid changes in collimator size
 - a. Number of conical collimator : 8
 - b. Sizes : 4.0, 5.0, 7.5, 10.0, 12.5, 15.0, 20.0 and 25.0 mm
 - c. Collimator change mechanism : Unlimited changes may occur via automated carousel, as defined per the treatment plan
 - d. Collimator radiation leakage : Less than 0.01% of the primary radiation area
2. Treatment Planning System 1 Q'ty

This Model treatment planning consists of a seamlessly-integrated, proprietary software platform, and provides the tools for image registration, target and critical structure delineation, dose calculation and plan review.

 - 1) Primary image type : X-ray Computed Tomography (CT)
 - 2) Secondary image fusion types : Magnetic Resonance Imaging (MRI), Additional CT
 - 3) Optimization : Inverse and Forward
 - 4) Planning type : Isocentric and Non-isocentric
 - 5) Dose calculation algorithm : Ray tracing
3. Patient Couch 1 Q'ty

This Model treatment table is equipped with two rotational, and one translational degrees of freedom, allowing the patient to be positioned precisely within the available treatment volume.

 - 1) Load limit : 135kg (297lb)
 - 2) Lateral range of motion (cm) : +/- 100mm around the isocenter
Vertical range of motion (cm) : +/- 100mm around the isocenter
Longitudinal range of motion (cm) : +/- 100mm around the isocenter
4. Target localization & Image guidance 1 Q'ty

This Model accomplishes precise three-dimensional (3D) patient positioning by means of an integrated planar kV imaging system that rotated around the patient' head.
5. Real-Time Dosimetry 1 Q'ty

This Model platform utilizes a novel exit Dosimetry system that monitors treatment delivery in real-time using a factory-commissioned MV imager.

6. Radiation Shielding	1 Q'ty
This Model is a first-of-its-kind self-shielded radiosurgical device dedicated to brain, head and neck application.	
1) Estimated annual dose : Below 1.0 mSv/year	
7. Acc's	1 Q'ty
1) Film Disc-45mm OD- beam calibration	
2) Assy-Phantom Insert-Cube, 4mm Ball	
3) User Manual	
8. Dosimetry & Immobilization for Maker	1 Q'ty
1) Machine QA Dosimetry sys.	1 Sys
- PTW MP3XS 3D water phantom w/Analysis Software	1 Set
- PTW Tandem Dual Channel Electrometer and Control Unit	1 Set
- PTW 31022 Pinpoint 3D Ionization Chamber 0.016ccm	1 pc
- PTW Truefix basic Detector positioning system	1 ea
- PTW 60023 micro-Silicon diode with holder	2 ea
- PTW T ref reference Ionization chamber for beam scanning	1 ea
- PTW Unidos Electrometer	1 ea
- Digital Inclometer	1 ea
- Digital Barometer	1 ea
- Analog Thermometer	1 ea
2) Patient QA Dosimetry sys.	1 Sys
- StereoPHAN (E2E, Ion Chamber insert)	1 pc
- SRS MapCHECK (SNC Patient QA S/W)	1 Set
- MultiMET Phantom	1 Set
- Leeds PXI-13/ KV Imaging QA Equipment	1 Set
- Sun Nuclear SRS Film QA S/W	1 ea
- Solid water Phantom with one ionization plate	1 ea
3) Immobilization sys.	1 Sys
- Customizable Head Support	2 ea
- Thermoplastic Mask	20 ea
- Head Rest Soft type	20 ea
- Silverman Headrests (A~F)	2 Set
- Lok-bar	2 ea
- Kneefix3	2 ea
- Feefix3	2 ea
- CT Marker	2 bx
- Bolus (300×300×5mm)	5 ea
- Oven or Waterbath for Thermoplastic Mask	1 ea
4) Additional Acc's	1 Set
- E2E QA Film (25set/bx) for Film QA	2 bx
- Film Scanner (Epson V600)	1 ea
- Gamma Survey Meter	1 ea

- Laptop for QA	.....	2 ea
- NAS for Storage (12T)	.....	1 ea
- Dosimetry Cart	.....	2 ea
9. HealVue & UV-C Upper Air Disinfection	.....	1 Q'ty
1) HealVue Ambient AudioVisual Healing sys.	.....	1 Sys
- Wavecare Themes License	.....	1 Set
- Respiratory Gating Interface	.....	1 Set
- Audiovisual Projection	.....	1 Set
- Remote Control Panel	.....	1 Set
2) Philips UV-C Upper Air Disinfection sys.	.....	3 Sys
- AFP-CM 4×9W Ceiling Mount Fixture	.....	1 Set

C. Consist of(per 1 Set)

1. The Gyroscopic Radio surgery system	1 Set
1) 3 MV linear accelerator	
a) 1,500MU/min	
b) SAD 450mm	
2) Collimator	
a) Uniquely designed collimator that enables rapid changes in collimator size	
b) 4.0, 5.0, 7.5, 10.0, 12.5, 15.0, 20.0 an 25.0mm	
2. Treatment Planning System	1 Set
3. Patient Couch	1 Set
4. Target localization & Image guidance	1 Set
5. Real-Time Dosimetry	1 Set
6. Radiation Shielding	1 Set
7. Acc's	1 Set
8. Dosimetry & Immobilization for Maker	1 Set
9. HealVue & UV-C Upper Air Disinfection	1 Set

D. Remarks

- Warranty : 검수(합격)일로부터 3년 종료월 말일