



Running Contract Details	
Equipment Name	Digital PET CT Scanner
Running Contract Valid Till	29-08-2026
Tender Ref No	KMSCL/EP/T544/1707/2024
Tendered Quantity	3
Supplier Name	M/s Boston Ivy Healthcare Solutions Pvt. Ltd
GST No	32AAF5524J1ZV
Installation & Delivery Period	20 Week(s)
Up-time / PM vist	95% & 4 Visits per year
Warranty period	3 Years

Supplier`s Details		
Address	Contact Details	
Door No:17/1544A 71/1544B Near PWD Guest House Road East Hil Kozhikode-673005	Contact Person	Mr. Nilesh Parikh
	Phone	
	Mobile No	7506450241
	Email	tender@medikabazaar.com

Item-wise Price Details				
#	Item Details	Unit Rate (Incl.all taxes & charges)	Service Charges (Through KMSCL)	Grand Total
1	Digital PET CT Scanner <i>Model & Make : uMI1550/United Imaging</i>	110000000 Incl.GST :12%	8112500	118112500
2	Dual head Injector	1285000 Incl.GST :12%	94768.75	1379768.75
3	Dry Laser Imager	650000 Incl.GST :12%	47937.5	697937.5
4	Full system UPS	1649999.99 Incl.GST :18%	115500	1765499.99
5	Lead glass	140000 Incl.GST :12%	10325	150325
6	Additional workstation with 1 TB storage capacity	2000000 Incl.GST :12%	147500	2147500
7	Dose calibrator for PET	1300000.01 Incl.GST :18%	91000	1391000.01

Item-wise Price Details				
8	Portable survey meter for PET	125000 Incl.GST :18%	8750	133750
9	Contamination monitor for PET	81900 Incl.GST :18%	5733	87633
10	Personal Pocket dosimeter	80000 Incl.GST :18%	5600	85600
11	Tungsten vial shield for carrying isotopes	142000 Incl.GST :18%	9940	151940
12	Syringe shields for 2 & 5 ml	100000 Incl.GST :18%	7000	107000
13	Shielded waste decay drum for PET radionuclide	35000 Incl.GST :18%	2450	37450
14	L bench with lead glass for PET	210000 Incl.GST :18%	14700	224700
15	Lead lined storage cabinet	210000 Incl.GST :18%	14700	224700
16	Interlocking lead bricks including corner blocks	2100 Incl.GST :18%	147	2247
17	Shield lead carrier for PET doses	20000 Incl.GST :18%	1400	21400
18	Light weight vinyl lead apron of 0.5mm lead equivalent	10000 Incl.GST :18%	700	10700
19	1707A19 Foot operative waste bin for PET	52500.01 Incl.GST :18%	3675	56175.01
20	Dose calibrator shielding ring for PET	85000 Incl.GST :18%	5950	90950
21	Dose dispensing unit	80000 Incl.GST :18%	5600	85600
22	Decontamination kit	34000 Incl.GST :18%	2380	36380
23	Tongs 12, 18 and 24 inch	10000 Incl.GST :18%	700	10700
24	Transport container (Biodex or equivalent)	100000 Incl.GST :18%	7000	107000
25	Cushioned sofa seats	16000 Incl.GST :18%	1120	17120
26	ICU Trolley	31000 Incl.GST :18%	2170	33170
27	Water purifier (hot and cold)	46000 Incl.GST :18%	3220	49220

Item-wise Price Details							
28	Televisions 42"	53699.99 Incl.GST :18%	3759	57458.99			
29	Office Table	14999.99 Incl.GST :18%	1050	16049.99			
30	Dining table with 10 chair	135000 Incl.GST :18%	9450	144450			
31	Rubco chairs	6700 Incl.GST :18%	469	7169			
32	Modular book shelf with glass doors	28000 Incl.GST :18%	1960	29960			
33	Library Chair	4900 Incl.GST :18%	343	5243			
34	Library Table	43500 Incl.GST :18%	3045	46545			
35	Jefferson chair	32500 Incl.GST :18%	2275	34775			
36	Projector and screen	120000.01 Incl.GST :18%	8400	128400.01			
37	Sound system with fixed mic and wireless mic	88000 Incl.GST :18%	6160	94160			
38	Pharma refrigerator 400L	85000 Incl.GST :18%	5950	90950			
39	Induction cooker	8000 Incl.GST :12%	590	8590			
40	Non revolving chair	13000 Incl.GST :18%	910	13910			
41	Refrigerator 260L	50000 Incl.GST :18%	3500	53500			
42	Emergency trolley	50000 Incl.GST :18%	3500	53500			
43	External Lasers	2500000 Incl.GST :12%	184375	2684375			
		121728800	8958202.25	130687002.25			
Annual / Comprehensive Maintenance Charges (Exl.Tax)							
Rate	4 th Year	5 th Year	6 th Year	7 th Year	8 th Year	9 th Year	10 th Year
Digital PET CT Scanner							
Labour	10,00,000.00	10,50,000.00	11,02,500.00	11,57,625.00	12,15,506.00	12,76,281.00	13,40,096.00
Comprehensive	53,00,000.00	56,18,000.00	59,55,080.00	63,12,384.80	66,91,127.89	70,92,595.56	75,18,151.29

Other terms & conditions

1. The supplier shall execute an agreement with the purchaser as per tender conditions (agreement format is given in the tender document).
2. The supplier shall submit performance security amounting to 5.00% of the value of the supply order.
3. The labour & comprehensive charges of equipment after the completion of warranty period is finalized by KMSCL as mentioned above.
4. Since discount rate is not applicable for equipment under Running Contract of KMSCL, purchase/supply order can be issued directly to supplier at the given rate with tax & other charges (exclusive of KMSCL service charges).
5. If purchase/supply order is issued directly to the supplier, KMSCL service charge need not be paid. But the copy of the said order may be forwarded to KMSCL for information.

Technical Specification

Equipment :Digital PET CT Scanner

A latest complete digital technology SiPM based whole body Positron Emission

Tomography system with multi slice at least 32 rows or more of detector and generating at least 64 slices or more per rotation, DICOM ready and isotropic volume spiral CT scanner designed for providing volume measurements of metabolic and physiological processes using positron emitters, as well as for producing accurate structural and anatomical fusion images and making attenuation maps for CT based attenuation correction. The system should have capability for simultaneous data acquisition, processing, image reconstruction & analysis and fusion of PET with CT images. System should be on the latest PET and CT platform. The acquisition & processing software should be of latest version. System must be FDA approved at time of bidding. Should offer "Digital PET CT Imaging System".

PART-A

A.1) PET gantry and Detector System

1. Gantry should have integrated PET & CT hardware
2. The patient gantry aperture size should be 70 cm and uniform for both, PET and CT.
3. The PET scanner should employ non-hygroscopic high light yield (80%) and low decay time scintillator material like LYSO crystals for detecting 511 Kev gamma photons in coincidence.
4. coincidence.
5. The PET scanner should have a semiconductor based SiPM detector to crystal coupling
6. The scanner must have a continuous ring of detectors without any gaps
7. Ring diameter should be 70 cm
8. PET crystal thickness should be between 2mm X 2mm X 14mm To 5mm X 5mm X 25mm
9. The geometric axial field of view. (FOV) as measured from the outer edges of the crystals must be 20 cm.
10. The coincidence timing window must be 4ns
11. Detector assembled with high optical and mechanical quality
12. A short decay time detector assembly is desirable in order to process each pulse individually at high activity level and to reduce the number of random
13. It is desirable the use of as much as segmented crystal elements and SiPM detectors to crystal coupling with integrated light-guided to achieve good spatial resolution
14. Side shielding should be added in proper geometry to restrict the random

A.2) Performance Characteristics

1. All specifications must comply with latest NEMA 2012 Standards Publication NU2 performance measurements without altering instrument parameters. Automatic QC Software / Source free QC software to measure these parameters must be available in the system.
2. performance measurements without altering instrument parameters. QC Software to measure these parameters must be available

in the system.

3. Additional feature that helps to enhance the NEMA spatial resolution values must be offered as a standard part.
4. TOF along with list mode based reconstruction algorithms for better lesion detectability
5. Axial & Transverse spatial resolution at 1 cm and 10 cm from the central axis of the gantry should be ≤ 3.5 mm FWHM
6. Timing Resolution should be below ≤ 400 psec
7. NEMA System sensitivity must be ≥ 9 cps/KBq at center
8. System energy resolution should be ≤ 13.0 %
9. 3-D scatter fraction should be ≤ 39 %.

Peak NECR should be >90 Kcps: (@13kBq/ml. specify the activity concentration for the peak NECR).

PART-B

B.1) CT Specifications

1. Multislice at least 32 rows or more of detector and generating at least 64 slices or more slice and Z-coverage. Must be ≥ 20 mm
2. Filters / Collimators and other specific features to reduce radiation dose to the patient (with separate adult and pediatric protocols)
3. Laser alignment light should control the iso-centric position of the patient in all planes
4. Multiple pitch factor settings, variable between 0.5 to 1.5 or more and should be freely selectable by the user.
5. Rotation time should be ≤ 0.5 sec for 360 degrees.
6. Image slice thickness should be from ≤ 0.5 mm to 10 mm and freely selectable
7. High contrast spatial resolution should be ≥ 15.0 Lp/cm at 0% MTF
8. Low contrast resolution should be at least be ≥ 4 mm @ 0.3% with 20 cm CATPHAN phantom
9. Microprocessor controlled high frequency be ≥ 50 kW x-ray generator
10. Tube Voltage range 70 kV - 140 kV
11. Anode heat storage capacity of 5.0 MHU or more
12. Tube Current of 20-420 mA
13. Automatic self-testing system
14. Display FOV must be ≥ 50 cm

PART-C

C.1) Patient Couch/Bed

1. The patient couch must be designed for comfortable patient support. accurate and precise positioning.
2. The horizontal motion of the patient bed must be electrically motorized and computer-
3. controlled with an independent operator control option.
4. The bed should also support treatment planning for radiotherapy patients.
5. Operator controls accessible from both sides of the patient must be provided for both
6. horizontal and vertical movements.
7. A digital readout of the horizontal and vertical position of the bed must exist and must be
8. located near the aperture controls for the bed to provide ease in positioning.
9. The couch should be designed which has an adjustable head holder with tilt capability
10. It should be able to bear be ≥ 200 kg patient weight
11. Full body horizontal length should be being ≥ 190 cm and cover whole body imaging (Head to Feet) in a single go.
12. Couch: Detachable indexed carbon fibre couch top compatible with IGRT Couch of Varian LINACs. Two indexing bars need to be provided along with the couch
13. External Lasers: Should provide three sets of fixed lasers(preferably green)to mark the iso centre over the patient

PART-D

D.1) Control, Evaluation and Processing Units:

D.1) Acquisition Workstation or Main Console

1. The acquisition for PET and CT should be in the same platform. The workstation should have high performance windows based computer consisting of:
2. Processor : Quad Xeon 3 GHz or better
3. RAM : ≥ 8 GB

4. HDD Storage: ?Specify the capacity
5. DVD Storage: ?4GB
6. Monitor :High resolution colour monitor with minimum resolution of 1280x 1024
7. Workstation should have image fusion & quantification facility.

D.2) CT Reconstruction System:

The CT reconstruction system should have high performance processor cluster capable of processing and reconstruction.

1. Processor : Quad Xeon 3 GHz or better
2. RAM :?8GB
3. Raw Data Capacity :?Specify

D.3) PET Acquisition System:

1. Processor : Dual Xeon -3 GHz Quad Core
2. RAM :?8GB
3. HDD Storage :?Specify

D.4) PET Reconstruction System

1. Processor : Dual Xeon~3 GI/ Quad Core
2. RAM :?8GB
3. HDD Storage :?Specify.

D.5) Software for Data Acquisition & Reconstruction:

Type of acquisition and reconstruction: list mode acquisition for all protocol with list mode time of flight image reconstruction.

1. **Acquisition Modes:** 2D /3D modes must include Static. Whole Body. Dynamic and Gated
2. acquisition provisions. 3D whole Body acquisition protocols with prospective 3-D
3. reconstruction algorithm. Iterative technique should also be available as standard.
4. **Acquisition Protocols:** The acquisition program should support pre-programmed scan

protocols with acquisition and reconstruction parameters and patient information with simple, Dynamic editing of parameters. These parameters would include all information necessary to acquire data on the PET scanner (e.g. scan duration, patient information, frame/list mode. Bed motion), as well as information necessary for reconstruction.

1. **Whole body Acquisition:** concurrent multi bed acquisitions (e.g. for the purpose of wholebody oncology studies) should advance the bed from one position to the next automatically.
2. **Dynamic Frame Mode Acquisition:** The acquisition set-up software must support multi-frame acquisitions of different (arbitrary) frame durations with no loss of data between frames.
3. **Automatic Acquisition Start:** The option to start an acquisition automatically must be provided. Fully 31 iterative reconstruction technique such as OSEM. MLEM. etc should be available as standard.
4. **PET reconstruction:** high-definition PET reconstruction and concurrent image reconstruction for whole body and brain.
5. **Reconstruction Start:** image reconstruction should simultaneously start for the acquired images while acquisition is still in process (concurrent reconstruction).
6. **Reconstruction Time:** The time for reconstruction of a uniform phantom with corrections for normalization scatter, and calculated attenuation applied must be finished within 1 minute at the end of complete examination.
7. **Voxel size:** The user should have the capability to specify the voxel size for reconstruction. The reconstruction program should support reconstruction in image sizes of at least 2mm or higher.
8. **Scatter Correction:** A scatter correction technique that is space variant and adjusts for patient geometry must be included. Scatter correction must be provided based on scan of the actual patient whose scan is being corrected and processed automatically.
9. **Others:** All other necessary software`s update for the integrated PET-CT system should be available as standard.

D.6) Advanced dedicated workstation for PET CT with Oncology, Cardiology & Neurology Package.

D.7) VSM Module for ECG gating

D.8) Application Software

1. Software for data collection, reconstruction of images for co-registration, 3-D volume reconstruction with 3-D fusion, whole body acquisition, attenuation correction, quality control software etc should be available as standard.
2. Automated image registration with MR, CT and 3D contouring.
3. System management software for computerized calibration, diagnostics and administration of the patients' records
4. Other Data Processing software should include:
 - a. Fully integrated processing & Reconstruction
 - b. CT Based attenuation correction
 - c. Volume rendering (VRT) and Virtual Endoscopy
 - d. Model based 3-D scatter correction
 - e. Iterative reconstruction methods.
 - f. 3-D prospective reconstruction with iterative scatter correction.
 - g. Dedicated Oncology Software and tumor comparison.
 - h. Quality Control Software for scanner calibration.
 - i. All software updates during warranty period shall be free of cost.

E. Accessories

1. Dual Head Injector – 1 no
2. Dry Laser Imager – 1 No
3. Color laser Printer – 1 No
4. UPS - 1 No
 - a. 120 KVA Online UPS for 30 minutes backup of the whole system in case of mains failure & fluctuation
5. Dehumidification – 3 Nos
 - a. 2 x 20 liters dehumidifier for UPS and electronic room & 1 x 20 liter dehumidifier for control room
6. Lead Glass
 - a. 120 cm x 100 cm lead glass between machine room and control room for radiation protection
7. Networking capability – 1 No
 - a. Equipment should be DICOM 3.0 and the company should provide networking capability/PACS to smoothly
8. Additional work station with minimum 1 TB storage capacity – 2nos
9. Dose calibrator for PET -1 No
10. Portable survey meter for PET-1 No
11. Contamination Monitor for PET-1 No
12. Personal pocket dosimeters-2 Nos
13. Tungsten vial shield for carrying isotopes-2 Nos
14. Syringe shields for 2 & 5ml -2 each
15. Shielded waste decay drum for PET radionuclide-1 No
16. L-bench with lead glass for PET-1 No
17. Lead lined storage cabinet-1 No
18. Interlocking lead bricks
 - a. 48 including the corner blocks
19. Shield lead carrier for PET does-2 Nos
20. Light weight vinyl lead apron of 0.5 mm lead equiv-2 Nos
21. Foot operative waste bin for PET – 1 set
22. Dose calibrator shielding ring for PET
23. Dose dispensing unit -1 No
24. Decontamination Kit -1 No
25. Tongs 12, 18 and 24 inch – 1 each
26. Transport container (Biodex or equivalent)-1 No