

## SPECIFICATIONS FOR CARDIOPULMONARY EXERCISE TESTING SYSTEM

### (CPET)

1. System should acquire 12 lead ECGs simultaneously and display the same on the screen along with breath-by-breath pulmonary activity.
2. Complete system should be from same manufacturer including main system, Treadmill & Bicycle.
3. System should be able to measure both cardiac and pulmonary activities simultaneously
4. Should have integrated 12 lead exercise ECG with full disclosure and scroll back option during exercise test
5. Should have software for ECG analysis with measurement and interpretation
6. Should have facility for automatic arrhythmia detection
7. •Should have a sampling frequency more than 3000hz for better quality of ECG

#### Technical Specification ECG part

- a. Frequency Range : 0-250 hz
- b. Sampling Frequency : 3000 hz or more samples /second
- c. Input Impedance : > 100mohm

#### Respiratory Specification

1. Should have facility to test Breath by Breath ergo spiro
2. System should allow to customize own panel during cardiopulmonary exercise testing
3. Should display data and charts through standard 9 panel wasserman plot
4. Should have facility for real time acquisition and capturing of dynamic flow volume for End Expiratory Volume Loops for evaluation of ventilatory limitation
5. Should have facility for detection of AT & RCP automatically at the end of test'
6. Should have facility for multiple ventilatory threshold detection analysis
7. System should allow for post editing for threshold calculations, AT1/VT1, AT2/VT2, Vo2 max, VCo2 Max, VE/VCo2 slope and other parameters
8. Should have light weight pneumotach sensor based on variable orifice which meets ATS/ERS requirements
9. Should have fast response and durable O2 technology for measuring O2 and latest ultrasound technology for CO2 measurement
10. CO2 cell should work for long life without periodic calibration.

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Technical Specification for Ergo Spiro

1. Flow Measurement Method: Variable Orifice Pneumotach Sensor
2. Measuring Range: 0 to  $\pm 16$  l/s
3. Accuracy:  $\leq \pm 3\%$
4. Volume Measurement Method: Digital Integration
5. Volume Range: 0 to 350 l
6. Accuracy:  $\pm 3\%$
7. O2 Analyser Measuring Method: Electrochemical Principle
8. Measurement Range: 0 to 30%
9. CO2 Analyser Measuring Method: Ultrasound Technology
10. Measurement Range: 0 to 15% CO2
11. Unit should have the facility to take the FEV1 value as a reference value before the test
12. System should be provided with a heavy-duty noiseless bicycle having a digital display for Load and Speed.
13. Also, System should be provided with a heavy-duty noiseless treadmill from the same manufacturer.
14. System should have a facility to connect an external NIBP monitor which should take NIBP automatically as per a set interval

The unit should be supplied with the following accessories

- a. Main Unit with complete PC, Printer
- b. Heavy Duty noiseless bicycle: 1no
- c. Heavy Duty noiseless treadmill: 1 no
- d. Servo Stabiliser: 1no.
- e. PnemotachSensor: 1 no
- f. Seal tight mask (Large,Medium): 1no each
- g. Chest Electrodes: 100nos
- h. Calibration Gas Cylinder 6ltr: 1no.
- i. Thermo Hygrometer: 1no.
- j. BP Monitor with Adult Cuff: 1no.

**Conditions for tenderer:**

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1. All accessories should be from the same Original Equipment Manufacturer for the main unit.
2. Instruments must be ISO certified and a copy should be enclosed. (The ISO Certificate must be issued by any organization accredited by the Bureau of Indian Standard or accredited by the international accrediting forum "IAF" (Certificate to be attached).
3. Should be USA FDA and/ or European CE be approved by 4 digits notified body.
4. Other necessary certifications if any required will be provided by the bidder for the smooth functioning of the machine.
5. Installation process should be performed by O.E.M trained service engineers/ service representatives on OEM letterhead or Service Report within 15 days of supply, with the mandatory provision of providing preventive services visit of OEM trained Service Engineer/ Service Representative quarterly per year till the completion of warranty period (i.e., 20 visits for the first 05 years) & further quarterly visits (04 visits/year) year till the completion of CMC period.
6. The equipment should have a Brand name/ Model Number embossed/etched on the equipment.
7. All the technical specifications in the compliance statement must be supported by Original Literature from the firm/ O.E.M with highlighting Numbering & flagging of all technical certificates.
8. Offered Equipment should have a strong Government Installation base.
9. Offered Equipment should have a Regional Sales Service Centre of the Original Equipment Manufacturer in the region for a 95 % uptime guarantee.
10. For the offered main unit, the essential, optional required consumables'/accessories' shelf life should be declared on the Original Equipment Manufacturer's letterhead.
11. In case of technical snag/failure/breakdown the response time for the inspection should be within 24 hours and repair within 05 days otherwise provide a service machine/ alternate arrangement to be made till the period of recovery of the breakdown of the unit, failing which attracts penal action as per the decision of institute/ hospital.

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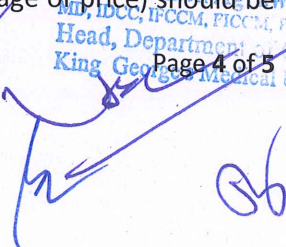
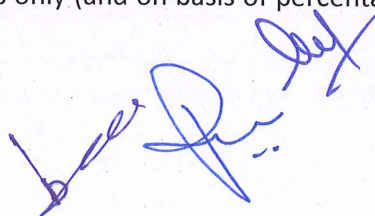
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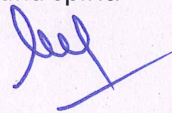
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12. For offered equipment the Training of technical staff and users should be performed by Original Equipment Manufacturer trained Service Engineers at the proper designated place- at bidders' cost.
13. Company should quote their latest model and need to provide an affidavit for the same.
14. As a tendering process the Demonstration of the offered Equipment is Mandatory at hospital/institute premises or other designated places at the bidder's cost.
15. The bidder must comply with the General Financial Rules and their modifications if any issued by the Government of India- 2017.
16. Any bidder from a country that shares a land border with India will be eligible to bid in the tender only if the bidder is registered with the Competent Authority (i.e., Registration certificate issued by the Ministry of Commerce and Industry (Department for Promotion of Industry and Internal Trade- DPIIT after October 2020). If any such bidder is not registered with DPIIT they will be liable for technical disqualification.
17. Principal (OEM) must authorize only one agent to be quoted in the bid otherwise multiple quotes through different agents in the same bid will be canceled.
18. The Bidder and its OEM both have to submit a notarized affidavit on the Indian Non-Judicial Stamp Paper of Rs.100/- that the bidder has not quoted the price higher than the current financial year and last financial year supplied to any government Institute/ Organization/ reputed Private Organization. OEM also has to submit that the price quoted by the bidder in the bid is on its behalf and the lowest in the current and last financial year in the country. Therefore, if at any stage it has been found that the supplier and its OEM have quoted lower rates than those quoted in this bid; the Institute (the purchaser) would be given the benefit of lower rates by the Supplier and any excess payment if any, will become immediately payable to the Institute (the purchaser). If such an affidavit is not submitted, the bid will be outrightly rejected. (Part of technical bid).
19. Guarantee / Warranty Period: Separate offers of Comprehensive Maintenance Contract (CMC on main equipment) and Annual Maintenance Contract (AMC on main equipment) for further 5 years after expiry of 5 years of warranty (i.e., 6<sup>th</sup>, 7<sup>th</sup>, 8<sup>th</sup>, 9<sup>th</sup> and 10<sup>th</sup> years) in rupees only (and on basis of percentage of price) should be



included in a financial bid in the absence of which the offer is liable to be rejected. Payment for CMC/AMC shall be made only after the expiry of the warranty of 5 years, in case the Institute (the purchaser) decides for availing of CMC/AMC services. Contract for CMC/AMC shall be decided on expiry of warranty but rates (not more than 5% inclusive of all taxes for 6<sup>th</sup> to 10<sup>th</sup> year) will be frozen at the price of an issued purchase order before the release of payment by the Institute (the purchaser). However, the Institute (the purchaser) may decide not to enter into any CMC/AMC contract without assigning any reason for the same, which shall be binding upon the bid.

20. Should provide 5-year CMC. CMC cannot be more than 5% of the contract value.
21. System configured application-specific educational video tutorials shall be provided as standard with the system.
22. Details of service outlet in India to render services during 5 years warranty period.
23. The principals must give a certificate if the supplier/vendor is changed during the course of the guarantee/warranty period, the principals would be responsible for the upkeep/maintenance of the quote/supplied equipment, besides honouring all the terms and conditions of CMC/AMC in letter and spirit.



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