

CARDIOPULMONARY EXERCISE TESTING SYSTEM (CPET): Revised Specifications after Pre Bid Clarifications

The Cardiopulmonary Exercise Testing System should be trolley mounted with the following specifications:

- **Cardio-pulmonary Exercise Test:** The system should be able to perform online Breath by Breath measurement of VO₂, VCO₂, VE, VT, RF, RER/Calorimetry, FeTO₂/PETO₂, FeTCO₂/PETCO₂, Work load, HR etc, Estimated Cardiac Output & Stroke Volume, Indirect Calorimetry and Anerobic Threshold.
- **Spirometry:** FVC, SVC, MVV & Routine Pre and Post Bronchodilator Testing
- **Pulse Oximeter** with Finger Clip sensor
- **Integrated 12 Lead ECG with full disclosure**
- **Automatic Blood Pressure Measurement through Bike**

Technical Specifications:

Flow meter: Should be digital Bi-directional Turbine/Pneumotachograph with a flow range of 0.03 to 20 L/s, Ventilation Range 5–300 L/m, Accuracy: ± 2%

O2 Sensor: Type: Paramagnetic / Spectrophotometer/Electrochemical, Range: 0-100% O₂, Accuracy: ± 0.01%

CO2 Sensor: Type: Non Dispersing Infrared (NDIR)/Ultrasonic, Range: 0-10% CO₂, Accuracy: ± 0.01%

Environmental Sensors: The system should have Temperature, Barometric and Humidity Sensors.

Note: All sensors should be non-consumable.

Power Supply: The operating AC Voltage range should be 100-240V AC ±10% 50/60Hz.


Interface: It should have interface for connecting to latest computer.

Cycle Ergometer: Compatible and automatically controlled by CPET system. Load range 6-999 watts in steps of 5 watts, RPM 30-130, adjustable Seat Height and handle bard, Automatic BP measurement, Graphic LCD Display, RS232 Interface. Should also be programmable and also run without PC if needed.

Treadmill : Speed range 0-22 Km/h, Elevation 0-24%, Running surface 150 X 50 cm, Maximum Load 200kg.Heavy
Duty 2 HP motor or above should be quoted. Emergency stop . It should be CE/FDA certified and compatible with cardiopulmonary exercise testing machine.

Software: Software should be supplied with the equipment. The management software should be designed for Windows 8/10 environments


Dr. Saugandha Singh
Assistant Professor
Dept. of Pulmonary Medicine
AIIMS, Bhopal-462020


Dr. SAURABH SAIGAL
MD (Anaesthesia), IDCC, PDCC & EDIC
Reg.No.48137
Additional Professor
Department of Anesthesiology & Critical Care
AIIMS, Bhopal-462020


Dr. Anil Goyal
MD (Medicine)
Jr. & Critical Care Medicine
AIIMS, Chandigarh
Senior Professor & Head
Pulmonary Medicine
AIIMS, Chandigarh

Essential Accessories: The system should be supplied with all essential accessories required like Mobile Cart, Calibration gas cylinders – 02 nos., Regulator - 01 nos., Branded Desktop Computer system Intel Core i3 Processor, 8 GB RAM, 500 GB HDD, Dual 18.5" LED Color Monitors, DVD Writer, 8 USB ports, Com Port, Keyboard, Mouse, Windows 8/10, Color Deskjet Printer UPS 1KVA in ready to use configuration.

Training for the system to be provided to Doctor & technician for 3 days

List of standard accessories and List of consumables with their life should be provided.

Quality assurance: The system should have European CE/US FDA and ISO certifications.


Dr. Anil K. Singh
Assoc. Prof.
Dept. of Pulm.
AIIMS, Bhopal-462020


Dr. ABH SAIG
M.D. (CC), FCCP
Reg. No. 10000
Additional Professor
Department of Anesthesiology & Critical Care
Bhopal


Dr. Adhish K. Joyal
M.D. (CC), MCh (Thoracic Medicine)
PGIMER, Chandigarh
Additional Professor
Pulmonary Medicine
All India Institute of Medical Sciences
Bhopal