Technical Specification of ECG Machine (12 Channel)

S.N.	Purchaser's Specifications		Bidder's Compliance Sheet		
	3 Channel ECG Machine		**Yes /No**	**Ref Docs Page No.**	**Remarks**
	Manufacturer				
	Brand				
	Type / Model				
	Country of Origin				
1	**Description of Function**				
1.1	ECG Machine is primary equipment to record ECG Signal in various configurations.				
2	**Operational Requirements**				
2.1	Microprocessor controlled digital 12 channel ECG machine suitable for adult, paediatric and neonate applications.				
3	**System Configuration**				
3.1	Digital,12 channel ECG machine with complete accessories.				
4	**Technical Specifications**				
4.1	12 channel ECG machine with simultaneous acquisition of 12 standard leads: aVR, aVL, aVF, I, II, III and V1-6 pre-cordials.				
4.2	Internal memory for storage of up to 500 ECGs. Or more.				
4.3	Splash-resistant alphanumeric keyboard with function keys.				
4.4	With zeroing reset, auto-base-line correction (0.5Hz) and 1mV test/calibration signal.				
4.5	Filter setting for line-frequency (50 or 60Hz).				
4.6	Continuous check on the quality of electrodes connection, audio visual alert on loss of signal.				
4.7	Appropriately protected for operation during defibrillation.				
4.8	Alphanumeric colour LCD display, at least 6" Display diagonal or more, shows ECG-curves, heart rate, patient name and ID, time, age, sex, speed, filter setting, battery status and warning messages.				
4.9	ECG machine shall have 3 modes of operation – Automatic, Manual & Rhythm.				
4.10	Shall have measurements and analysis programs.				
4.11	Measurements: QRS rate, PR interval, QRS duration, QT/QTC, P/QRT/T axes.				
4.12	Shall have interpretation and waveform analysis.				
4.13	Shall have maintenance free digital thermal array printer.				
4.14	Printer shall be able to print ECG report with rolling paper or Z-fold paper.				
4.15	Paper speed, user adjustable: 5,12.5,25 and 50mm/sec.				
4.16	Common mode rejection ratio (CMRR) shall be $\geq$ 100dB.				
4.17	Sensitivity, automatic or user selectable: 5, 10 and 20mm/mV.				
4.18	Rechargeable Lithium ion battery or better & charger integrated in the device.				
4.19	Battery backup at least 4 hours of continuous operation or more .				
4.20	The unit shall be compact, light in weight, easy to carry (weight not more than 3kg including battery).				
5	**Accessories, spares and consumables**				
5.1	**Accessories:** • Reusable Patient cable with reusable electrodes for adult & paediatric- 1 set. • Reusable patient cable with reusable electrodes for neonate				

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	& infant- 1 set. • Recording paper rolls- 6 rolls • Bottles of electrode gel, approximately 350ml- 2 nos.. • Set of spare fuses- 1 set • Plastic protective dustcover- 1 no.			
5.2	All standard accessories, consumables and parts required to operate the equipment, including all standard tools and cleaning and lubrication materials, to be included in the offer. Bidders must specify the quantity of every item included in their offer (including items not specified above).			
6	**Operating Environment**			
6.1	The system offered shall be designed to be stored and to operate normally under the conditions of the purchaser's country. The conditions include Power Supply, Climate, Temperature, Humidity, etc.			
6.2	Power supply: 220–240V AC, 50Hz fitted with appropriate plug type D round 3 pins. The power cable must be at least 3m in length.			
7	**Standards and Safety Requirements**			
7.1	Must submit ISO for Medical Devices **AND**			
7.2	Must submit European CE (93/42 EEC Directives) or USFDA approved product certificate.			
7.3	Electrical safety conforms to standards for electrical safety IEC-60601-1 General Requirements and IEC-60601-2-25 Safety of Electrocardiograms.			
8	**User Training**			
8.1	Must provide user training (including how to use and maintain the equipment).			
9	**Warranty**			
9.1	Comprehensive warranty for 2 years after acceptance.			
10	**Maintenance Service During Warranty Period**			
10.1	During the warranty period supplier must ensure preventive maintenance and corrective/breakdown maintenance whenever required.			
11	**Installation and Commissioning**			
11.1	Supplier must accomplish proper installation and commissioning of the equipment onsite.			
12	**Documentation**			
12.1	User (Operating) manual in English.			
12.2	Service (Technical / Maintenance) manual in English.			
12.4	Certificate of calibration and inspection from factory.			

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